



EPR NEWSLETTER

Volume 11, Number 1

Page 1

2000

From the Editor—

Congratulations. We congratulate the President of the International EPR(ESR) Society, Prof. John R. Pilbrow (Monash University, Australia), on his election as an Honorary Member of the National Magnetic Resonance Society of India. The National Society elects three foreigners as Honorary Members each year.

Our congratulations also to Prof. Dante Gatteschi (University of Florence, Italy) on his recent selection to receive the Bruker Lectureship for the year 2000. More information will appear in a subsequent issue.

Deadlines for Newsletter copy. To submit any material for publication in the Newsletter, please observe the deadline for each issue. Page 2 has the next three deadline dates. (The deadline for the next two issues are 30 April and 23 July). Deadlines are posted on the EPR Newsletter web page (<http://ierc.scs.uiuc.edu/news.html>)

A letter to International EPR Society Members

Greetings and Happy New Century! We are attempting to get the IES finances on a more business-like footing. Part of this process involves billing at the beginning of each year. Therefore, the President of the IES, Prof. John Pilbrow, and the executive committee have requested that we issue a membership dues notice for the year 2000. Please use the membership update form in the back of this issue, which includes methods for paying dues in different locations of the world. Please note the new field of interest, #29—HFEP (high field/high frequency EPR). With thanks in advance,

Linn Belford, Editor

Press Time News Release—

Sandra Eaton (Denver) and Kev Salikhov (Kazan) have agreed to be nominated by the Executive as the two additional Vice-Presidents required under our new Constitution. The new Constitution provides for the Vice-Presidents in turn being Senior Vice-President. Hiroaki Ohya-Nishiguchi, as the single Vice-President elected under the old Constitution, will automatically become Senior Vice-President until 30 September 2000.

- Newsletter Editor: R. Linn Belford, Urbana, IL
- Assistant Editor, Becky Gallivan, Urbana, IL
- Typography: Martha Moore, Urbana, IL.
- This, the official newsletter of the International EPR(ESR) Society, is supported by the Society, by corporate and other donors, and by the National Center for Research Resources in the U.S. National Institutes of Health. For additional information including how to contact the editor, see "About This Publication" on p. 31.

FELLOWS OF THE INTERNATIONAL EPR(ESR) SOCIETY

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ANNOUNCEMENTS AND REPORTS FROM THE INTERNATIONAL EPR (ESR) SOCIETY

From the President—

From this year it is our intention to bring out the Newsletter regularly every quarter. My soundings from many members from around the world make it clear that people look forward to receiving the newsletter regularly.

What may not be well known amongst members is that Bruker pays for the distribution of the EPR Newsletter around the world. The Society records its appreciation and acknowledges that it could not afford to do so itself under present conditions. In particular we thank both Dr. Dieter Schmalbein and Dr. Art Heiss for their support and encouragement of the Society through the Bruker contribution. Of course we must thank Linn Belford, the Editor of the Newsletter, and the team at Urbana for preparing the copy for each issue.

This year Executive decided to bring forward the awards process and I am pleased to report that the various committees are at present deliberating on this year's decisions and we hope to be able to announce the winners in the next Newsletter.

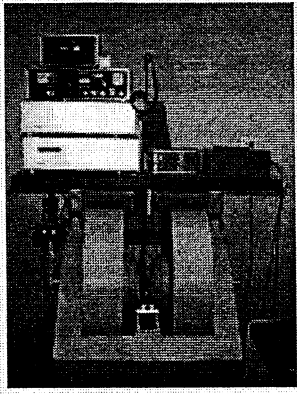
I have already been approached by the organisers of next year's ISMAR conference in Israel as to whether the IES Gold Medal might be presented during that meeting. Since the Society does not organise its own conferences, wherever possible we try to arrange for presentations at appropriate meetings with the agreement of the organisers. In the past we have enjoyed excellent cooperation with both AMPERE and ISMAR and with Gareth and Sandy Eaton through the EPR Symposium in Denver each year.

We look forward to developing effective cooperation with other magnetic resonance societies both international and regional. This is a task that will be undertaken by the Executive during the next few months.

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The Society is ten years old this year. We need to think of a suitable way to celebrate our anniversary! Suggestions are welcome.

We look forward to developing and growing into the new millennium. This will be challenging and demanding since the Society is relatively small by international standards. Like most scientific societies it has to rely on volunteers - Office Bearers, Regional Treasurers and members of Awards Committees.

John Pilbrow, President

Deadlines Set for Newsletter Materials

Henceforth there will be firm and fast deadlines for the receipt of materials for each issue of the *EPR Newsletter*. They will be published in every issue of the newsletter and on the *EPR Newsletter* web page. The deadlines for 2000 are:

Volume 11 Number 2: **April 30, 2000**

Volume 11 Number 3: **July 23, 2000**

Volume 11 Number 4: **October 31, 2000**

Publishable items arriving after each of these deadlines will be held over for the next issue.

When Does Low = High?

*Gareth R. Eaton, Sandra S. Eaton, George A. Rinard,
Richard W. Quine, University of Denver
and Howard J. Halpern, University of Chicago*

Recently, two of us (GRE and SSE) edited a special issue of Applied Magnetic Resonance on "High-Field and High-Frequency Electron Paramagnetic Resonance Instrumentation." (Vol. 16, No. 2, 1999). In the process of compiling that issue, the question was raised, "what is high?" Similarly, at the 2000 International EPR Symposium there will be an emphasis on "low-field and low-frequency" EPR spectroscopy and imaging. From the perspective of X-band EPR, 250 GHz is undeniably "high" frequency and 250 MHz is undeniably "low" frequency. However, from the perspective of a researcher who studies radicals at 250 GHz or even 95 GHz, X-band is "low" frequency. This problem of using qualitative descriptors relative to unspoken reference

points is endemic in science, and sometimes prevents effective communication across subgroup boundaries. As with all communities or subgroups of scientists and scholars who interact strongly with each other but less so with the general community of scientists and scholars, a local jargon with its local reference points develops. Consider other examples, such as strong and weak interactions, or fast and slow kinetics. The problem can become even worse when colloquial practice is at odds with formal nomenclature established by national or international standards-writing bodies.

Unfortunately, even in journals that commonly report fundamental EPR results, it is not uncommon to find a paper that never tells the frequency or magnetic field at which a spectrum was obtained, except possibly indirectly via the model number of the commercial spectrometer used. Since many different frequencies are increasingly being used in EPR, it seems reasonable to label each spectrum with the actual RF or microwave frequency (note that the purist would say that even this sentence is flawed, since engineers would use "RF" to designate all but the highest of frequencies used in EPR!). Although most commercial "X-band" spectrometers operate between ca. 9 and 10 GHz, home-made X-band spectrometers may operate anywhere in the band (which is 8 – 12 GHz in coax, and 8.2 – 12.4 GHz in waveguide), so even saying "X-band" is not sufficient.

Among most EPR spectroscopists, it would be generally agreed that the frequencies being explored for *in vivo* spectroscopy (a few tens of MHz to ca. 1 GHz) are "very low frequency." Unfortunately, the IEEE designation for 30 to 300 MHz is VHF (very high frequency), which arises out of an historical perspective. Hence, low = high. We believe that for unambiguous communication, when a broad range of frequencies is described, EPR spectroscopists should agree to use specified frequency ranges (e.g., 100 to 500 MHz) or phrases such as "in the hundreds of MHz range." When describing a particular spectrometer or experimental result, use of the specific frequency, e.g., 257 MHz, avoids totally the low = high issue, and communicates more precisely than using either VHF or "very low frequency."

To complicate the picture even more, there can be multiple "standard" nomenclatures resulting in labels that are not unique. For example, commercial EPR spectrometers that operate at ca. 34 or 35 GHz are commonly called Q-band. There is an HP (and other industry) designation of K_a for coaxial components in the 26 – 40 GHz band, but in waveguide the industrial designations are R for 26.5 – 40 GHz and Q for 33 – 50 GHz. The electronic warfare (or military) 20-40 GHz band is called K. The IEEE designation EHF (extremely high frequency) encompasses 30 – 300 GHz. C band is 4-8 GHz in coax, but 0.5 – 1 GHz in the military designation, and C is not used to label a waveguide band. In coax, S is 2 – 4 GHz, but it is 2.6 – 3.95 GHz in waveguide. L-band is 1 – 2 GHz in coax, but designates 40-60 GHz in the military nomenclature. It happens that 22 GHz is properly called K in all schemes except IEEE, where it is in the SHF band.

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There is a handy pictorial representation of band designations on page 186 of the HP RF & Microwave Test Accessories 1999/2000 Catalog. Another summary is in Table 1 of the cited review by Eaton and Eaton. The column labeled "new military" in Eaton and Eaton is the same nomenclature as the spectrum labeled "electronic warfare bands" in the HP catalog.

We hope these examples will stimulate the use of numerical values in place of low, high, S, etc., in describing EPR results.

References:

1. S. S. Eaton and G. R. Eaton, Applications of High Magnetic Fields in EPR Spectroscopy. *Magn. Reson. Rev.* **16**, 157-181 (1993).
2. American National Standard Dictionary for Technologies of Electromagnetic Compatibility (EMC), Electromagnetic Pulse (EMP), and Electrostatic Discharge (ESD), Institute of Electrical and Electronics Engineers (IEEE), New York, 1998. See section 3.3 Frequency spectrum designations and symbols.

COMPANY PROFILE

Millimeter-Wave Oscillator Company

Millimeter-wave Oscillator Company was formed in 1993, to provide end users with high performance frequency sources. The company has provided frequency sources to several universities around the world doing research in high frequency EPR. The company has also provided oscillators to NASA and NOAA for radiometers used in weather

satellites and to profile the atmosphere of the planet Mars. The company has also provided numerous frequency sources for other research applications in science and industry. The company works closely with customers in offering designs which will best meet their technical requirements and budget. Terrial Cutsinger is the owner of the company and can be contacted to answer any questions; see ads, pp. 3 and 6.

MEETING PROCEEDINGS

Report of the General Meeting of the International EPR(ESR) Society Held 3rd August 1999, 1:30pm, during the 22nd International EPR Symposium Denver 1-5 Aug 1999

In the Chair: Professor John R Pilbrow (Secretary)

Report of Meeting

1. Apologies and Attendance

Apology for absence: Prof. J.R. Norris, Jr. [President]. Twenty-four members of the Society were present.

2. Reports

2.1 Newsletter

Newsletter Editor, Linn Belford, reported on the Newsletter. A pre-press copy of Newsletter 10/2 was handed out to those in attendance. It is subject to revision and suggestions were still being sought. Variable delays in the past resulted from not making firm deadlines. In future, deadlines will be firm. Deadline for following Newsletter [10/3] will be 15th September 1999. It is hoped that there will be no holdup in mailing 10/2. Mailing is provided by Bruker at their expense as a generous contribution to the Society. In response to the suggestion by one member that the Newsletter should be placed on the Web, Linn Belford suggested that access in full should be through an ID number. This could be a membership number that does not presently exist. The Chair acknowledged the excellent job done by Linn Belford since 1988, before the Society was established.

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2.2 Executive Actions and Activities

The Chair gave a run-down of major tasks undertaken by the Executive. Three Executive Meetings had been held since he became Secretary in September 1997 [Chicago, April 1998; Berlin, August 1998; Chicago, March 1999]. The Executive made some changes to awards [see item 3], endorsed redrafting of the Constitution by the Secretary [see item 4], arranged for medals to be made for all award winners and acted as the Nominations Committee in making nominations of Office Bearers for the next three years [from the end of September 1999]. The timetable for award selection and announcements got behind due to delay in distribution of Newsletter 9/3 in spite of careful forward planning.

The existence of the Society was a clear indication that IES members did not wish to be dominated by the NMR community and wanted their own identity.

2.3 Financial position and membership

Membership is nominally ~1500 but only about 50% of members pay dues. Financial hardship in soft currency countries is covered by reduced subscriptions. Even allowing for that the Society should expect an annual income ~\$24,000¹. It is important that members do pay their dues annually. Regrettably, the Society's finances have been running 'hand-to-mouth' for the past two years. Already members may pay by credit card and many already take advantage of that service. Regional Treasurers are holding various amounts in their accounts but until the amounts they hold reach an appropriate level, it is too costly to arrange transfers in view of high bank transfer charges. An appropriate reminder letter should be sent to members who have not paid or they should be dropped from membership after warning.² The Treasurer should be asked to investigate direct payment via the Website providing appropriate security can be arranged.

Currently the US account of the Society is approximately \$6000 in arrears due to outstanding payment required by the University of Illinois. This is embarrassing but will be solved shortly as members pay 1999 dues in response to the reminder in the next Newsletter [10/2].

2.4 Office Bearers

2.4.1 Executive nominations for Sept 1999-Aug 2002

These are:

President: Professor John R Pilbrow, Monash University, Australia

Vice-President: Professor Hiroaki Ohya-Nishiguchi, Yamagata, Japan

Secretary: Professor Haim Levanon, Hebrew University, Jerusalem

Treasurer: Dr Chris Felix, Medical College of Wisconsin

The President, Professor James R Norris Jr, University of Chicago, as the Past President, will remain on the Executive.

2.5 Planning & Timetable 1999-2002

The Secretary has drafted a calendar for 2000 which covers deadlines for Newsletters, subscription reminders, calls for award nominations, award announcements etc.. This will be discussed in the first instance with the next Secretary, Professor Haim Levanon, during the Secretary's short visit to Jerusalem next week. The time frames have to be appropriate and realistic. Linn Belford suggested that the nominees for the Executive should be fully apprised of their responsibilities.

3. Awards & Awards Committees

3.1 Changes to Awards from 1999

Some changes had been made by the Executive. The Silver Medal Award for Physics/Instrumentation has become two awards, The Silver Medal for Physics/Materials Science and a separate Silver Medal for Instrumentation.

3.2 Extended Citations

Award nominations are expected to be accompanied by a 100-150 word citation for use at presentations and for publication in the Newsletter.

3.3 Medals

The Society had been in the embarrassing situation of awarding medals but not, in fact, having actual medals to present! This has been remedied through casting of 32 medals covering 1992-1999 by a new member, Professor Tengiz Sanadze, from the Republic of Georgia.

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4. Constitution

4.1 Problem with existing Constitution

The Chair spoke to the 'Explanatory Memorandum' published in Newsletter 10/2 explaining why it is necessary to amend the Constitution. Copies were made available to those at the meeting and are posted on the IES web site.

The Council is to be disbanded, and its functions replaced by an Executive enlarged by addition of two further Vice-Presidents. In addition to Professor Ohya-Nishiguchi, who is the Executive nominee under the present Constitution, the two additional Vice-Presidents are most likely to be sought from North America and Europe so as to provide global representation.

Awards provisions have been moved from the Constitution to By-Laws that can be changed by a vote of at least 5/7 Executive Members. The Newsletter Editor, who will be appointed by the President, will be a non-voting member of the Executive.

Regarding awards, J. Weil asked that all nominations be acknowledged. The Chair said that it would be his intention as President to do that as a matter of course.

4.2 Proposed New Constitution

4.2.1 Voting papers are incorporated in Newsletter 10/2.

4.2.2 Enlargement of Executive [referred to above in 4.1]

4.2.3 Council functions to be taken over by Executive [reported in 4.1].

4.2.4 Two further Vice-Presidents will be needed [see report in 4.1].

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5. IES Office

5.1 Current arrangements

The IES Office has been at the University of Illinois since the inception of the Society. IES provides half the salary of one Secretary and is also the beneficiary of the hidden subsidy of many contributions by other staff of the IERC.

5.2 Long-term

It is the view of the present Executive that every 10 years or so the Office should move and by 2002 that the Office should be moved to Europe provided a suitable location can be arranged. It is believed that the international nature of the Society should be reflected in the sharing of major responsibilities as much as possible.

6. Website

There is an IES Website maintained by the IERC through their Center Website. IES should consider whether it should have its own separate Website. Links to ISMAR and other Societies should be investigated.

7. Members to comment on value of membership, subscription level etc.

The question was raised as to the level of subscription. Is it appropriate or should it be increased? It was agreed that we need more members and for all members to pay their dues. The Chair indicated that if membership were to increase substantially, the Executive should consider reverting to the original subscription level of \$25USD.

J. Weil asked about donations and tax-free status of donations. The position was assumed to be clear for US taxpayers but it seemed unlikely that non US members would get tax benefits in their own countries. It was agreed the matter should be explored.

8. Any other business – Nil

9. Conclusion

The Chair thanked all those who attended for their presence and contributions. The meeting concluded at 2.35pm. Professor Sushil Misra was thanked for taking notes at the meeting.

John Pilbrow, Secretary IES

Footnotes:

¹ The Revised Constitution sets out the procedure in such cases.

² If 80% of members were financial in a given year, the income could rise to more than \$30,000. This goal will be pursued by the incoming Executive.

NOTICES of MEETINGS

NOTICE: NOTICES AND UPDATES ABOUT SOME MEETINGS ARE NOT PRINTED IN THIS COLUMN IF THE INFORMATION ARRIVES TOO LATE OR IF SPACE IS LIMITED. BUT SUCH MEETINGS MAY BE ANNOUNCED ON THE EPR NEWSLETTER WEB SITE WITH LINKS TO DETAILED CONFERENCE INFORMATION WHERE POSSIBLE. CONTACT IERC@UIUC.EDU TO HAVE YOUR MEETING ADDED-

<http://ierc.scs.uiuc.edu/news.html>

3rd WORKSHOP ON EPR INSTRUMENTATION AND METHODOLOGY, National Biomedical EPR Center Biophysics Research Institute, Medical College of Wisconsin, Milwaukee, Wisconsin, May 5-6, 2000.

Our Third Workshop on EPR instrumentation and methodology will be held Friday and Saturday, May 5 and 6, 2000. The title of this workshop is "EPR Methods in Structural Biology." The first day will consist of lectures, while the second day will be devoted to hands-on demonstrations, discussions, and tours of the National Biomedical EPR Center.

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This workshop is supported by the National Center for Research Resources of the National Institutes of Health. The workshop will mark the 25th year of funding for the National Biomedical EPR Center by NCCR.

The budget for the workshop is limited, but it is expected that a portion of the living expenses while attending the Conference will be covered. Also, a limited number of travel awards for students may be available.

If you are interested in attending, please contact Christopher C. Felix, Ph.D.; Scientific Administrator, 8701

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42nd ROCKY MOUNTAIN CONFERENCE on ANALYTICAL CHEMISTRY; 23rd INTERNATIONAL EPR SYMPOSIUM, Broomfield, Colorado, July 30-August 3, 2000.

The 23rd International EPR Symposium will be held in Broomfield, Colorado (a suburb of Denver), July 30 - August 3, 2000 at the Omni Interlocken Resort, in conjunction with the 42nd annual Rocky Mountain Conference. About 150 people participate in the EPR Symposium each year, presenting over 100 papers. Approximately 1000 people attend the Rocky Mountain Conference, which also includes an NMR Symposium and instrument exhibit. The Omni is a new hotel that was specifically designed for conferences this size. Hotel information is available at:

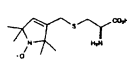
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The International EPR Symposium covers all aspects of EPR spectroscopy and contributions in all areas are invited. This year there will be special sessions on industrial applications of EPR organized by Reef Morse (reef@xenon.che.ilstu.edu) and on *in vivo* EPR organized by Murali Krishna (murali@helix.nih.gov). Dr. Paul Strudler, NIH, will give a lecture entitled "Navigating the Bay of Funding" that will be followed by a discussion session. Lectures and posters will be scheduled from Monday am (July 31st) through Thursday noon (August 3rd).

We invite you to participate in the EPR Symposium. Researchers are encouraged to present unpublished results and tentative conclusions to stimulate discussion. We suggest that you consider presentations in the poster sessions, which have proven to be an excellent forum for exchange of ideas. The book of abstracts for the Rocky Mountain Conference will be prepared electronically (see instructions at: <http://www.milestoneshows.com/rmcac>). In addition to the electronic submission, please send three hard copies of your abstract directly to us for use in preparing the preliminary program.

Sunday, July 30th Bruker Instruments will sponsor a tutorial Second Workshop on Pulsed EPR at the University of Denver, which will be followed by an open house at the University of Denver EPR labs. Lunch will be provided by Bruker Instruments and transportation for each event will be

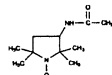
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Please inform Dr. Arthur Heiss (e-mail: ah@bruker.com; Fax: 978-670-8851) if you will attend.

We hope that you will be able to come to the 2000 EPR Symposium. Updated information on the conference, including the preliminary program, will be posted on our web page:

<http://www.du.edu/~seaton/eprsym.html>

The topics "Industrial Applications of EPR" and "Low Frequency in vivo EPR and Imaging" have been selected for special issues of Applied Magnetic Resonance. These issues will contain regular peer-reviewed papers and will not be "proceedings" of the Symposium. One can contribute to these journal issues independent of whether presentation was made at the Symposium. Regular papers on these topics should be sent to the Eatons, who will edit these special issues. Please tell us by April 20th whether you intend to submit a paper. Prof. Gareth R. Eaton, ☎: 1-303-871-2980, e-mail: geaton@du.edu; Prof. Sandra S. Eaton, ☎: 1-303-871-3102, e-mail: seaton@du.edu.

SECOND PULSED EPR WORKSHOP and OPEN HOUSE, University of Denver, Denver, Colorado, July 30, 2000.

On Sunday, July 30, 2000, Bruker Instruments and The University of Denver will present the Second Pulsed EPR Workshop. The Workshop will be held on the University of Denver campus in the F. W. Olin Hall (same location as the First Workshop). The extent of the content and the overall level will be decreased substantially, based on the experience last year that the First Workshop was too long and at too high a level. The Second Workshop will be very tutorial relative to the 1999 Workshop.

Schedule for Sunday, July 30, 2000

0900 bus from conference hotel to DU for people who will attend the Workshop;

0945 coffee in atrium of Olin Hall

1000 Workshop begins in lecture room in Olin Hall (same as last year)

1200 second bus from conference hotel to DU, for additional people who will attend lunch and the afternoon demonstrations

1300 lunch in the atrium of Olin Hall

1400 Bruker presentation, in lecture room in Olin Hall

1500 Open House and demonstrations in EPR lab in S.G. Mudd

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1630 Ice cream and cookies served in atrium of S. G. Mudd
1730 buses return to conference hotel

Workshop Outline – Second Pulsed EPR Workshop

0945-1000 Coffee in the Atrium

1000-1030 Survey of the types of problems EPR can solve, and how pulsed EPR can solve them better than CW can, to provide the incentive for the tutorials to be presented – Gareth R. Eaton

1030-1130 Introduction to pulsed EPR – the physical basis for the Hahn echo – Dr. Ralph T. Weber

1130-1145 break

1145-1230 T_m and ESEEM elementary principles and demonstrations with Mathcad calculations (using computer projection in the lecture room) – Gareth R. Eaton, Sandra S. Eaton, and Ralph T. Weber – The Mathcad programs will be available on the Eaton web site for attendees to use at home following the Workshop

1230-1300 General question and answer period – Panel consisting of Gareth R. Eaton, Sandra S. Eaton, and Ralph T. Weber and Peter Höfer

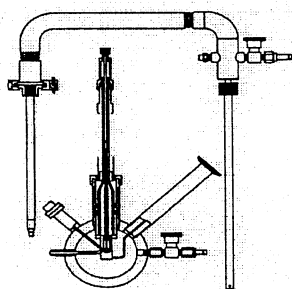
1300-1400 Lunch

Afternoon Demonstrations

- E580 2-pulse, 3-pulse, FT EPR
- The DU/Bruker 250 MHz EleXsys spectrometer
- Other spectrometers in the Eaton lab

Expecting that people who are now using pulsed EPR may not choose to attend the morning tutorial, there will be a second bus from the Omni to the University to bring additional people at lunch time. All EPR Symposium attendees are invited to lunch and the afternoon demonstrations. Buses will return people to the Omni by ca. 6:30 pm. Please inform Dr. Arthur Heiss (ah@bruker.com or fax: 978-670-8851) if you plan to attend.

Gareth and Sandra Eaton
geaton@du.edu, seaton@du.edu
www.du.edu/~seaton/eprsymp.html



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**XIXth INTERNATIONAL CONFERENCE on
MAGNETIC RESONANCE in BIOLOGICAL
SYSTEMS (XIX ICMRBS), Florence, Italy, August
20-25, 2000.**

You are cordially invited to attend the XIXth International Conference on Magnetic Resonance in Biological Systems (XIX ICMRBS) to be held in Florence, Italy from August 20 to 25, 2000. Florence is easily accessible both by train (ca. 1.5 hrs from Rome by fast train) and by plane. The airport, located 5 Km from the city center, is connected, through direct flights, with the major Italian and European cities.

Scientific Program—The scientific program will cover a wide range of research topics in the field of magnetic resonance applied to biological systems. Particular attention will be devoted to new and promising areas of research as well as to emergent methodological tools within the frame of NMR research in the post-genomic era. The scientific agenda will include plenary lectures, session lectures and poster presentations. The sessions will be organized on the following topics: protein structure, folding, and mobility; EPR/ENDOR applications; membrane proteins; In vivo spectroscopy and imaging; DNA, RNA, nucleotides and their interaction with proteins; SAR of drugs and drug discovery; computation and dynamics.

Location—The conference will take place at the Centro Internazionale Congressi and Palaffari Firenze located close to the central railway station in the historical and monumental area of Florence.

Accommodation—Accommodation will be arranged in hotels of different categories, mostly within walking distances from the venue (student dorms will be available). Detailed information and reservation forms for accommodation will be included in the second circular.

Change of Address—Information on the scientific program, accommodation, general arrangements, registration forms and instructions for preparation of abstracts are continuously updated in our web site. Please visit it! Registration can be done on line. For further information, please contact the XIX ICMRBS Secretariat, Dept. Chemistry & CERM, Univ. Florence, Via Luigi Sacconi 6, I-50019 Florence, Italy; ☎: 39-055-4209260; Fax: 39-055-4209253; E-mail: icmrbs@cerm.unifi.it. Or visit the web address at:

<http://www.cerm.unifi.cnr.it/icmrbs.html>

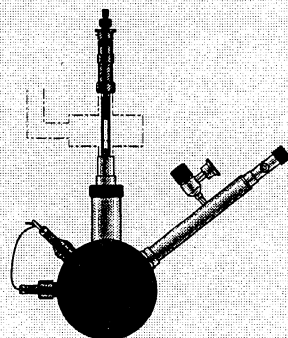
Conference Committees: *Organizers:* I. Bertini, (Florence, Italy) Chairperson; L. Banci (Florence, Italy) Ex. Manager; R. Kaptein (Utrecht, The Netherlands); H. Rueterjans (Frankfurt, Germany); G. Valensin (Siena, Italy). *Assistants to the organizers:* R. Del Conte & I.C. Felli (Florence, Italy); Treasurer: P. Turano (Florence, Italy). *International Advisory Board:* A.S. Arseniev (Moscow, Russia); C.M. Dobson (Oxford, U.K.); S. Forsen (Lund, Sweden); G. Govil (Bombay, India); A.M. Gronenborn (Bethesda, USA); C.W. Hilbers (Nijmegen, The Netherlands); J.S. Hyde (Milwaukee, USA); C. Ho (Pittsburgh, USA); M. Kainosho (Tokyo, Japan); J.F. Lefevre (Strasbourg, France); J.L. Markley (Madison, USA); A. McDermott (New York, USA); K. Möbius (Berlin, Germany); R.S. Norton (Parkville, Australia); S.J. Opella (Philadelphia, USA); M. Rico (Madrid,

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(Pharm. & Upjohn); P.A. Temussi (Napoli); A. Tomasi (Modena); A. Tramontano (IRBM); F. Uggeri (Bracco); L. Zetta (CNR). *Chairperson of Local Organizing Committee:* R. Pierattelli (Florence, Italy).

6TH INTERNATIONAL SYMPOSIUM on SPIN TRAPPING: "SPIN TRAPS, NITROXIDES and NITRIC OXIDE SPECTROSCOPY, CHEMISTRY and FREE RADICAL BIOLOGY," Marseille, France, August 27-31, 2000.

Tentative Topics—The Scientific Committee has selected a broad range of topics: •Synthesis of novel nitroxides; •Synthesis of novel nitrones and nitroso spin traps; •Synthesis of nitric oxide and peroxyxynitrite donors; •Nitric oxide and peroxyxynitrite traps; •Spin trapping of superoxide and nitric oxide derived from nitric oxide synthases; •*In vivo* trapping of nitric oxide; •Pharmacokinetics of spin traps and spin adducts, bio-reduction of nitroxides; •Nitroso hemoglobin; •Nitron traps: antagonists of neuronal injury, ALS, and neurodegenerative diseases; •Chemistry and biology of nitroxyl anion.

Location—It is a great honour that Marseille has been chosen as the conference site. Marseille has a reputation for hospitality towards people from all nations. Its geographic location and ready accessibility offer a convenient and pleasant setting to host an international meeting.

We hope to match the excellence of the scientific sessions with an enjoyable and memorable social programme. We look forward to seeing you in Marseille in the year 2000.

Scientific Committee: A. Alberti (*Univ. Bologna, Italy*); O. Augusto (*Univ. São Paulo, Brazil*); M. Davies (*Heart Research Inst. at Sydney, Australia*); B.C. Gilbert (*Univ. York, UK*); L. Greci (*Univ. Ancona, Italy*); K.U. Ingold (*Natl. Research Council at Ottawa, Canada*); B. Kalyanaraman (*Medical Coll. Wisconsin, USA*); K. Makino (*Univ. Kyoto, Japan*); R.P. Mason (*NIEHS, USA*); A. Rassat (*Ecole Normale Supérieure, Paris, France*); A. Tomasi (*Univ. Modena, Italy*); P. Tordo (*Univ. Provence, Marseille, France*); J.L. Zweier (*Johns Hopkins Medical Inst., Baltimore, USA*).

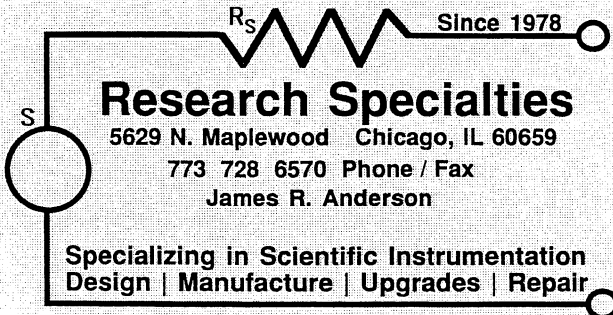
Local Organization: Prof. Paul Tordo and the memberships of VMR 6517 "*Chimie, Biologie et Radicaux Libres*" (association CNRS and Aix-Marseille 1 & 3 Universities).

Congress Secretariat: Atout Organisation Science, 6th International Symposium on Spin Trapping, 106 Corniche Kennedy, 13007 Marseille, France; ☎: 33-0-4-91-52-75-10; FAX: 33-0-4-91-52-93-73; E-mail: atoutsci@atout-org.com; or, for full meeting information visit the Congress web-site:

www.up.univ-mrs.fr/~wsrep/spin.trapping.meeting.html

AMPÈRE SUMMER SCHOOL on "APPLICATIONS of MAGNETIC RESONANCE in NOVEL MATERIALS," Nafplion, Peloponese-Greece, September 3-9, 2000.

The Ampère Summer School on "Applications of Magnetic Resonance in Novel Materials" will be held at Nafplion (Peloponese-Greece) 3-9 September 2000. The scope of the School is to introduce magnetic resonance



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techniques and their use in the investigation of current topics of Materials Science: 1) Disordered Systems and Glassy Materials; 2) Liquid Crystals; 3) Modulated and Incommensurate Systems; 4) Novel Electronic Conductors; 5) Ferromagnetic and Paramagnetic Systems; 6) Porous Systems; 7) Imaging of Materials; and 8) Bio-materials. Apart from NMR and MRI techniques, EPR and Mössbauer Spectroscopy will be also introduced.

The scientific program includes invited plenary lectures, oral and poster contributions. Young scientists are strongly encouraged to participate in the school and present their research activities in oral and poster contributions. The following lecturers will present one-hour plenary lectures: •Prof. Jerzy S. Blicharsky (*Krakow, Poland*); •Prof. Robert Blinc (*Ljubljana, Slovenia*); •Prof. Bernhard Blumich (*Aachen, Germany*); •Prof. Ferdinando Borsa (*Ames, Iowa*); •Prof. Detlef Brinkman (*Zürich, Switzerland*); •Prof. H. J. M. De Groot (*Leiden, Netherlands*); •Dr. Jannis Deligiannakis (*Athens, Greece*); •Prof. Jani Dolinsek (*Ljubljana, Slovenia*); •Prof. Franz Fajara (*Dortmund, Germany*); •Dr. Jorge Luis Gavilano (*Zürich, Switzerland*); •Prof. Clare Gray (*NY, USA*) -not yet confirmed; •Prof. Mladen Horvatic (*Grenoble, France*); •Prof. Kazushi Kanoda (*Tokyo*) -not yet confirmed; •Prof. Raymond Kind (*Zürich, Switzerland*); •Prof. Serge Lacelle (*Quebec, Canada*); •Prof. Fanny Milia (*Athens, Greece*); •Prof. Pierre Panissod (*Strasbourg, France*) -not yet confirmed; •Prof. Moshe Paz-Pasternak (*Tel Aviv, Israel*); •Prof. Vasilis Papaefthymiou (*Ioannina, Greece*); •Dr. Josef Roos (*Zürich, Switzerland*); •Dr. Josef D. Seymour (*Albuquerque, USA*); •Prof. Jan Stankowski (*Poznan, Poland*); •Prof. Josef Zwanziger (*Indiana, USA*).

The School will be held at XENIAS PALLAS hotel, which rises above the town of Nafplion, at the southern coast, and is built in the middle-age castle of Akronafplia. Social and cultural events, as well as an official dinner will be arranged for the participants and the accompanying persons. For on-line registration and more information about the summer school and the town of Nafplion, please visit the web site of the Summer School at:

www.ims.demokritos.gr/nmrlab/conference/

For more information, please E-mail G. Papavassiliou at gpapav@ims.demokritos.gr

33rd ANNUAL INTERNATIONAL MEETING ESR GROUP of the ROYAL SOCIETY of CHEMISTRY and 4th MEETING of EUROPEAN FEDERATION of EPR GROUPS (EFEPR). A COMBINED MEETING on PROSPECTS for EPR SPECTROSCOPY in the 21st CENTURY, September 10-14, 2000, John Innes Centre, University of East Anglia, Norwich, UK.

Scientific Programme. The scientific programme of the meeting will cover the topic of "Prospects for EPR Spectroscopy in the 21st Century." The meeting will consist of a series of invited lectures and poster presentations. The following speakers have so far accepted invitations to present lectures, and their tentative titles are: •Riccardo Basosi, Siena, Italy – *Recent Advances in Computer Aided EMR of Biological Systems in Solution*; •Marina Brustolon, Padova, Italy – *Radicals and photoexcited states of fullerene derivatives studied by cw and pulsed EPR*; •P. Dinse, Darmstadt, Germany – *Atoms in chemical traps - a playground for EPR spectroscopists*; •Jack Freed, Ithaca, USA – *A perspective of modern ESR in the study of molecular dynamics*; •Georg Gescheidt, Basel, Switzerland – *Borderline Cases to Drugs: Organic Radicals Studied by Paramagnetic Resonance*; •Daniella Goldfarb, Rehovot, Israel – *Awaiting title*; •Didier Gourier, Paris, France – *Bistable Electron Magnetic Resonance: the most elementary case of bistable memory effect in the interaction of a two-level quantum system with an electromagnetic field*; Gunter Grampp, Graz, Austria – *Kinetics of inter- and intramolecular electron transfer reactions measured by ESR linebroadening effects*; Edgar Groenen, Leiden, Netherlands – *The electronic structure of the*

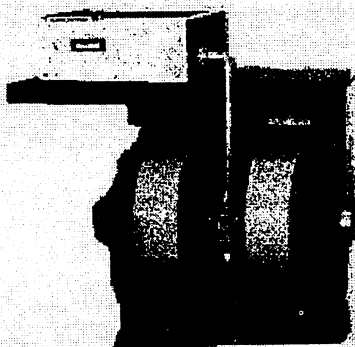
metal site in blue-copper proteins; Gunnar Jeschke, Mainz, Germany – *Structure determination of synthetic macromolecule-metal complexes by EPR and molecular modelling techniques*; Adam Jezierski, Wroclaw, Poland – *The environmental aspects of free radical reactions in some natural materials*; Reinhard Kappl, Homburg, Germany – *Characterisation of Structural, Dynamic and Electronic Properties of Metal Centers in Proteins by High-resolution EPR Techniques*; David Lowe, Norwich, UK – *Paramagnetic Resonance at the John Innes Centre*; Wolfgang Lubitz, Berlin, Germany – *Radicals, Radical Pairs and Triplet States in Photosynthetic Reaction Centers Studied by CW and Pulsed EPR/ENDOR Technique*; David J. Lurie, Aberdeen, UK – *Imaging Free Radicals In Vivo by Overhauser Techniques*; Derek Marsh, Göttingen, Germany – *Developments in Non-Linear EPR Spectroscopy for Spin Label Applications to Biological Membranes*; Keith McLauchlan, Oxford, UK – *Problems in Triplet Mechanism Spin Polarization*; Klaus Möbius, Berlin, Germany – *Multifrequency high-field EPR and ENDOR on protein structure and dynamics: Recent accomplishments and future plans*; Damien Murphy, Cardiff, UK – *Understanding mechanistic pathways in enantioselective homogeneous catalysis by combined ENDOR and computer modelling techniques*; Andreas Poepl, Leipzig, Germany – *ESR, ENDOR, and ESEEM Studies of Paramagnetic Adsorption Complexes in Zeolites*; Oleg Polouektov – *High Frequency EPR Spectroscopy: History, Development, Applications*; Brian Roberts, London, UK – *ESR studies of sulfur-containing radicals in solution*; Graham Smith, St. Andrews, UK – *Awaiting title*; Lev Weiner,

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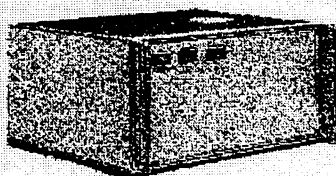
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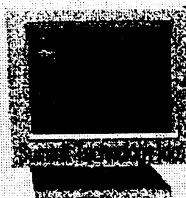
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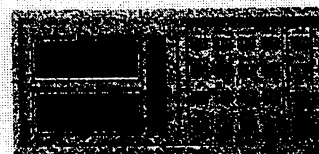
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Weizmann Institute of Science, Israel – *Site directed spin labeling study of enzymes structure and folding*; Nicola D. Yordanov, Sophia, Bulgaria – *Some applications of EPR to environmental problems*.

The conference will commence with registration at UEA on Sunday afternoon, followed by dinner on the UEA campus in the evening. This will be followed by a reception and private viewing at the Sainsbury Centre Gallery within the grounds of the University of East Anglia. Lectures of 30 or 40 minutes duration will take place in the morning or afternoon in the conference Centre at the John Innes Centre. There will be ample time for informal discussions during the scheduled coffee and lunch breaks. The abstracts to each lecture will be posted onto the web as soon as they become available.

Discussion Forum. In addition to the traditional presentation of lectures at the meeting, there will also be two open forum discussion sessions. Each discussion session will be chaired by a distinguished scientist in that field. The two chairpersons for this year's Discussion Forum and the titles of the sessions are: Session I (Chairman A. Tomasi, Modena, Italy) – *EMR Techniques in Biomedical Fields; Do they work?*; Session II (Chairman A. Schweiger, Zürich, Switzerland) – *Advanced EMR Techniques; Are they worth the effort?* The Forums will commence with four short oral communications from the conference participants. Each communication will be of 5 minutes duration, which must be relevant to the topic of the Forum session. The floor is then open to discussion on the presented talks or any points of relevance to the particular topic. The purpose of these short communications is therefore to crystallise and instigate an interesting discussion among the leading scientists in this field.

The Bruker Lectureship 2000. Bruker Analytische Messtechnik GmbH generously sponsor an annual award to be given by a scientist who has made major contributions in the development and/or use of EPR spectroscopy. This award is presented at the annual conference of the ESR group of the RSC and follows a plenary lecture given by the distinguished recipient. This Lectureship for 2000 has been awarded to Dante Gatteschi, University of Florence, Italy.

Poster Presentations. Participants are invited to make a poster presentation. Ample time has been set aside for poster displays, which will be an important and integral part of the

meeting. A small drinks reception will be held during the session, to (hopefully) create an informal atmosphere and generate interesting discussions. Those wishing to present a poster must send details of their contribution (preferably by email), typed neatly on one sheet of A4 size paper (30 x 21 cm) giving Title, Authors, Name of Institution and Abstract. The abstracts will be reproduced for distribution to all conference participants. In addition, abstracts submitted in electronic format will be displayed on the web prior to the meeting. Authors that would prefer not to have their abstracts displayed on the web should indicate so in their covering letter. The absolute deadline for submission of the Poster Abstracts is 31 July 2000. Abstracts should be clearly marked Poster Abstracts and submitted to Dr. D.M. Murphy, Department of Chemistry, Cardiff University, PO Box 912, Cardiff CF10 3TB, UK; e-mail: MurphyDM@cardiff.ac.uk; ☎: 44 (0)1222 875850 or 874080 Fax; 44 (0) 1222 874030.

Location and Accommodation. The meeting will be held at the University of East Anglia (UEA) and John Innes Centre in Norwich. The historical town of Norwich is on the main East Coast Line from London Kings Cross train station, with regular train services (journey lasts approx. 2 hrs). Norwich is also accessible by Air, with regular flights from Amsterdam. All accommodation will be at UEA, with both standard and en-suite rooms available. UEA is situated about 15 minutes walk from the Conference Centre at the John Innes Centre, where all lectures/poster presentations will take place.

Application and Registration. Further extended details, general information and registration forms are available on the conference web page:

<http://www.cf.ac.uk/esr/norwich.html>

All application forms, abstracts or requests for further information should be sent to Dr. D.M. Murphy, Department of Chemistry, Cardiff University, PO Box 912, Cardiff CF10 3TB, UK. E-mail: MurphyDM@cardiff.ac.uk; ☎: 44 (0)1222 875850 or 874080; Fax: 44 (0) 1222 874030.

VIIth INTERNATIONAL SYMPOSIUM on MAGNETIC FIELD and SPIN EFFECTS in CHEMISTRY and RELATED PHENOMENA, July 15-20, 2001, Tokyo, Japan.

This is the 10th anniversary of the conference, which began in 1991 in Tomakomai (Japan) and continued in 1992 in Konstanz (Germany), 1994 in Chicago (USA), 1996 in Novosibirsk (Russia), 1997 in Jerusalem (Israel), and 1999 in

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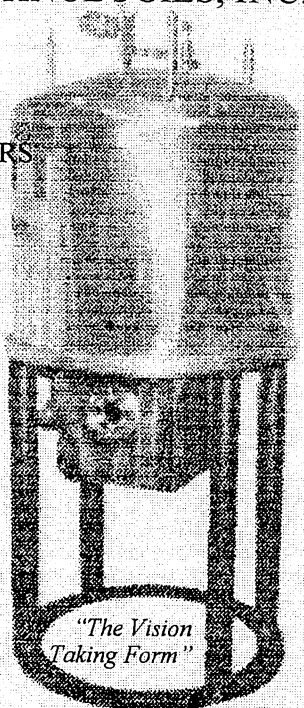
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Emmetten (Switzerland). This meeting is similar to its predecessors and will focus on various subjects concerned with the influence of magnetic fields on chemical and biochemical reactions. Topics to be covered will be: Magnetic field dependent processes in the gas, liquid, and solid phases, in restricted environments (e.g. micelles), in radiolysis reactions, in enzymatic reactions, in photosynthesis and biomimetic models. Effects at high and low magnetic fields. Applications of, and novel developments in CIDNP, CIDEP, MARY, RYDMR, and high-frequency induced CIDEP spectroscopies. Nuclear spin labeling and orth-para conversion. New experimental developments and techniques.

Scientific Program – The scientific program will consist of invited lectures and contributed talks as well as three poster sessions. A special session celebrating the 80th birthday of Prof. Nagakura is intended. Here, the present trends of magnetic field effects in the gas phase will be viewed.

Location and Accommodation – All conference activities will take place from 18:00 of July 15 to 14:00 of July 20 at the hotel "Komaba Eminence," a conference hotel located in the center of Tokyo (Ohashi 2-19-5, Meguro, Tokyo 153-0044).

Registration – In order to receive further information regarding the symposium, please return the preliminary registration form to the organizer via E-mail, FAX, or mail by July 31 of 2000. The first circular including the details of this meeting and its preliminary registration form can be requested via E-mail (spinchem@postman.riken.go.jp). The second circular will be published about December 15 of 2000.

Address for Correspondence – Dr. Hisaharu Hayashi, Organizer, Molecular Photochemistry Laboratory, RIKEN (The Institute of Physical and Chemical Research), Wako,

Saitama 351-0198, JAPAN; ☎: 81-48-467-9394, 9395, Fax: 81-48-462-4664; E-mail: spinchem@postman.riken.go.jp.

WORKSHOP on EPR STUDIES of VIABLE BIOLOGICAL SYSTEMS, (especially *in vivo*) and RELATED TECHNIQUES (especially oximetry), September 8-13, 2001, Dartmouth Medical School, Hanover, New Hampshire

The EPR Center for the Study of Viable Biological Systems at Dartmouth Medical School, Hanover, NH, USA (Hal Swartz, PI) is pleased to announce the scheduling of the approximately 9th meeting in the series on *In Vivo* EPR and related studies. Previous meetings include: • University of Illinois (1986); • L'Aquila #1 (1989); • Dartmouth #1 (1993); • Yamagata #1 (1994); • L'Aquila #2 (1995); • Yamagata #2 (1997); • Dartmouth #2 (1998); • Aberdeen (1999). This meeting will take place on September 8-13, 2001 and will be carried out as part of the activities of the EPR Center for Viable Systems at Dartmouth, a NIH supported resource center.

The aim is to bring together all active researchers in this field to present the latest results and concepts in the field. The meeting will include coverage of the following general topics: • Instrumental Approaches (*In Vivo* Spectroscopy, *In Vivo* Imaging, Overhauser Imaging, Pulse Methods, Resonators); • *In Vivo* Oximetry; • Development of Paramagnetic Materials for *In Vivo* Uses; • *In Vivo* Measurements of Nitric Oxide; • Use of *In Vivo* EPR for Pharmacology; • *In Vivo* Measurements of Reactive Species; • EPR Studies of Viable Cell Systems.

As in the previous meeting held at Dartmouth in 1998, the program will emphasize opportunities for scholarly and personal interactions, similar to the atmosphere of a Gordon Conference. The program will consist of oral and poster presentations, with an emphasis on discussions.

The anticipated logistical/financial arrangements are to have a single registration fee which will cover all meals and the hotel for the period of the evening of Saturday, September 8 through dinner on Thursday, September 13. Departure will be on Friday morning, September 14. Financial assistance will be available for some young investigators. At this time it is estimated the total cost per person, including registration, rooms, and meals, to be about \$600 for those who stay at the Hanover Inn and share a room. If you are interested in attending, please fill out the response form on our web site:

www.dartmouth.edu/~eprctr/workshop2001

3RD INTERNATIONAL CONFERENCE on NITROXIDE RADICALS "SPIN: SYNTHESIS, PROPERTIES and IMPLICATIONS of NITROXIDES," September 24-26, 2001, University of Kaiserslautern, Germany.

After two successful meetings in Pécs 1979 and Novosibirsk 1989 we are proud to host the 3rd International Conference on Nitroxide Radicals, September 24-28, 2001 in Kaiserslautern, Germany.

Kaiserslautern is located about 70 miles southwest of Frankfurt and 300 miles east of Paris. Trains Frankfurt-Paris have a stop in Kaiserslautern. The city is also connected by the Autobahn (Frankfurt)-Mannheim-Kaiserslautern-Saarbrücken-Paris as well as Mainz-Kaiserslautern. Trains run directly from Frankfurt Rhein-Main International Airport to Mannheim about every 30 minutes with immediate connections to Kaiserslautern. Duration: 40 min. to Mannheim and another 40-60 min from Mannheim to Kaiserslautern. The city and university are located at the western rim of the Pfälzer Wald, the largest contiguous forest area in former West Germany. The town was founded in the 12th century by emperor Barbarossa (Red Beard) and has roughly 100,000 inhabitants. The university is a Technical University, founded in 1970 with somewhat above 8000 students. Congress venue will be at the university which can be reached from downtown or the railway station by frequent busses within 10 to 15 min. Bruker's ESR Division has agreed to host the participants for half a day showing their superconducting magnet production as well as their EPR facilities near Karlsruhe, located about 90 km East of Kaiserslautern.

The members of the International Organizing Committee (Lawrence Berliner, Marcus Hemminga, Kálmán Hideg, Alexander Kokorin, Hirotada Fujii, André Rassat, Heinz-Jürgen Steinhoff, Harold Swartz & Wolfgang Trommer) will do their very best to provide an interesting program that will include the following topics: • Nitroxides: synthesis, chemistry and biochemistry, application in chemistry, biochemistry, biomedicine and polymer sciences theory and simulation; • Nitrones: chemistry and application; • Nitric oxide: physiological role and application; • New types of stable radicals and other recent developments; • Special event: Excursion to Bruker Analytik GmbH, ESR Division.

For further information on this meeting, contact Prof. Dr. Wolfgang E. Trommer, Fachbereich Chemie, Universität Kaiserslautern, Postfach 3049, D-67653 Kaiserslautern, Germany; ☎: 49-631-205-2045; Fax: 49-631-205-3419; e-mail: trommer@chemie.uni-kl.de or visit the web page:

<http://iris1.chemie.uni-kl.de/spin2001.html>

POSITIONS AVAILABLE & WANTED

POST-DOCTORAL POSITION AVAILABLE at the TOKYO INSTITUTE of TECHNOLOGY

The Tokyo Institute of Technology is seeking applications from appropriate candidates for a JSPS (Japan Society of Promotion of Sciences) Post Doc. The requirements for this position are: a Ph.D. earned after April 1993 and US citizenship (or green card). He or she is requested to come to Japan by the end of March, 2000. The contract will be one + one year, for two years max. (minimum 3 months, maximum 2 years). Monthly salary is 270 (+ 50 for accompanying family) kyen, about US\$2,550 (+ US\$480). In addition, 200 kyen will be paid at the time of arrival and up to 100 kyen (US\$940) for housing each month. Also provided each year

are a research grant of up to 1.5 myen, insurance fee, and 58 kyen travel expenses in Japan. A candidate with experience in EPR of solids is highly preferred. Interested candidates please apply as soon as possible to Hideo Hosono, Project Leader of HOSONO Transparent ElectroActive Materials Team, Exploratory Research for Advanced Technology (ERATO), Japan Science and Technology Corporation and Professor of Materials and Structures Laboratory, Tokyo Institute of Technology, Nagatsuta, Midori-ku, Yokohama 226-8503, JAPAN; ☎: 81-45-924-5359; Fax: 81-45-924-5339 or 5359; E-mail: hosono1@rlem.titech.ac.jp. For further information about the Hosono Lab, visit:

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for the graduate school, visit:

<http://www.iem.titech.ac.jp/Research/hosono/hosono.html>

TWO GRADUATE STUDENT POSITIONS AVAILABLE at LEIDEN UNIVERSITY

The Department of Biophysics of Leiden University, The Netherlands, has two graduate student (PhD) positions open for (bio)physicists or physical chemists who are interested in applying various magnetic resonance techniques for unraveling the fundamental molecular mechanisms of solar energy conversion in plant photosynthesis.

The Magnetic Resonance Group of the department has a longstanding tradition of applying sophisticated electron paramagnetic resonance methods to obtain information on the structure and function of the photosynthetic apparatus that cannot be obtained by other methods. The techniques comprise state-of-the-art time-resolved flash photolysis EPR equipment at a number of microwave frequencies ranging from 2 to 130 GHz, pulsed EPR, including 1D and 2D Electron Spin Echo Envelope Modulation (ESEEM) and pulsed Electron-Nuclear Double Resonance (ENDOR) spectroscopy, optically detected magnetic resonance (ODMR), and magnetophotoselection experiments, all at variable temperatures down to 1.2 kelvin. Several of the experimental set-ups have been developed in our own laboratory.

The first project involves the investigation of spin-isotope-labelled tyrosine and quinone cofactors of so-called Photosystem II of plants with a variety of EPR methods, including 1D and 2D ESEEM, pulsed ENDOR and time-resolved EPR at various frequencies in the range 2-130 GHz.

The second project involves the development and implementation of a new ODMR spectroscopy, in which changes in the circular dichroism of the photosynthetic preparation are measured and correlated with the detailed structure of the cofactors and their protein environment.

The two projects represent two different approaches aiming at understanding the mechanisms of photosynthetic energy conversion in sufficient detail to make it possible to develop environment-friendly biomimetic solar energy cells that harvest sunlight and convert it into sustainable chemical and electrical energy. The projects are embedded in a TMR Network of the European Union, comprising groups in Athens, Berlin, London, Munich, Oxford, Padova and Paris, which coordinates the investigations aimed at developing a source of sustainable energy.

The positions offered are each for a four-year term, and can be occupied as of now. Gross salary will start at 2374 Dutch Guilders/month plus DG 700/month special allowance, with yearly increases to DG 4037/month in the fourth year. Candidates should preferably have some experience with EPR or related spectroscopies. Experience in photosynthesis research is appreciated but not necessary. They should submit a full resume, including a list of papers and practical works, and name and addresses (with phone, fax and email) of at least two referents.

Further information about the Magnetic Resonance Group can be found at the website of the Biophysics Department, with a description of current research and a list of recent papers: <http://www.biophys.leidenuniv.nl/research/RCs/>

For more information on the two projects contact Prof. Dr. A.J. Hoff, phone +31-71-5275955, fax +31-71-5275819, email hoff@biophys.leidenuniv.nl or Dr. P. Gast, phone +31-71-5275979, email gast@biophys.leidenuniv.nl. Applications should be sent to Prof. Dr. A.J. Hoff, Biophysics Department, Huygens Laboratory, Leiden University, P.O. Box 9504, 2300 RA Leiden, The Netherlands.

EQUIPMENT & SUPPLIES EXCHANGE

FOR SALE: VARIAN E-102 X-BAND BRIDGE

Varian E-102 X-band microwave bridge, with reference arm, fully checked and refurbished, recently replaced klystron with weak pitch S/N test included. Minimum price: US\$5,000. To make an offer, contact Vanni Piccinotti, NMR Technical Services, Via del Berignolo 5, 50141 Firenze, Italy. ☎/FAX: 39-055-434841; e-mail: vpnmr@ats.it.

EPR INSTRUMENT WANTED

Searching for an EPR instrument in good working condition with variable temperature attachments. Contact Dr. Horia Caldararu, Romanian Academy, Institute of Physical Chemistry "I.G. Murgulescu," 77208 Bucharest, Romania, FAX: 40-1-3121147; E-mail: hcaldararu@chimfiz.icf.ro or hcaldararu@pcnet.pcnet.ro.

FOR SALE: SPECTRANOVA TEST EQUIPMENT

Test Equipment for sale: Brand New SpectraNova EPR spectrometer, test equipment from the manufacturer is for sale at reduced price. (Technical details may be seen on [www.http://members.eunet.at/dr.-kondor](http://members.eunet.at/dr.-kondor)). For more information contact please Dr. L. Kondor, fax +43 1 877 8446, tel +43 1 877 0553, E-mail: dr.-kondor@eunet.at

AVAILABLE: NITROXIDE RADICALS

A small collection of fairly well-preserved unique nitroxide radicals synthesized by Dr. L.A. Myshkina in the 1980's is now being made available:

- 2,6-bis(N-oxylo-tetramethyltetrahydropyrid-4-yl)thyophene
- 5-(N-oxylo-tetramethyltetrahydropyrid-4-yl)thyophene-2-al

- 2,6-dimethylenecyclohexanone substituted by 6-(N-oxylo-tetramethyltetrahydropyrid-4-yl)thyen-2-yl residues at both alpha-carbon atoms
- 4-chloro-4-nitro-TMP-N-oxy

Small quantities of the following compounds are also available:

- 4-bromo-4-nitro-TMP-N-oxy
- 1,4-di-TMP-butaine-bis-N-oxy

For information about obtaining any of the above compounds, contact: A.E. Myshkin, Inst. Biochem. Phys., Russian Acad. Sci., Kosygin St. 4, 117977 Moscow V-344, Russia; E-mail: Myshkin@photonics.cs.ru

FOR SALE: BRUKER ESP-300 RADIO-SPECTROMETER

The instrument is intended for investigation of materials by means of electronic paramagnetic resonance (EPR). It was purchased from Bruker Analytische Messtechnik GMBH by St. Petersburg quartz-glass factory "Stekvar" in 1989 and was installed in 1990 (tested in April 1990). But it was not used at all, because since that time this research activity was stopped at "Stekvar." It was not moved. Now the instrument is working completely. So, the instrument seems like new. This ESP-300 have maximum specification (for example, there is helium low temperature additional device provided by Oxford Instruments). This instrument is provided with system for double and triple resonance. There are some spare parts. System # is ZD 698. The instrument's technical details are: 1) it works in X-band (frequency: 9.79 GHz); 2) spare cavities: ER 4111 VT, ER 4114 HT, ER 4105 DR; 3) NMR magnetometer is ER 035 M with ESR in cavity probe; 4) microwave bridge is ER 044 MRDH; 5) temperature range from 3.5 K (Oxford Instruments helium low temperature unit); 6) double & triple resonance system. For further information, contact Prof. Roman Eismont, E-mail: empire@peterlink.ru; ☎: 7-812-249-02-95; FAX: 7-812-249-51-14; Regular mail: 6 Shafirovsky Avenue, St. Petersburg 195273 Russia.

AVAILABLE: ISOTOPE-CONTAINING SPIN PROBES

A wide assortment of special ¹⁵N- and/or ²H-containing spin probes is available at moderate prices. For a catalog and price list of available compounds, contact Prof. Igor' Grigor'ev, Inst. of Organic Chemistry, Novosibirsk 630090 Russia; E-mail: maxx@nioch.nsc.ru. In the US, contact Sergei Dikanov, E-mail: dikanov@uiuc.edu

FOR SALE - NMR MAGNETOMETER

Sentec Model 1001, including 3 standard probes covering the range of 1 to 10 kG. In good working order, this 1981 model (uses NIM bin!) includes 7-digit display, 0.01 Gauss resolution, accuracy: 10⁻⁶ relative, 10⁻⁵ absolute, has automatic peak search feature, BCD output, etc. Can be bought with or without NIM bin and CRT display. Make an offer! Prof. E. J. Knystautas, Physics Dept., Univ. Laval, Quebec City (Quebec) G1K 7P4; ☎: 1-418-656-5569, FAX: 1-418-656-2040, E-mail: ejknyst@phy.ulaval.ca

WANTED: TERMINAL/MONITOR

Terminal/monitor for Bruker ECS 106 spectrometer wanted. Contact: Lon B. Knight, Jr., Furman University, Department of Chemistry, Greenville, SC 29613, USA; ☎: 1-864-294-3372; FAX: 1-864-294-3559; E-mail: lon.knight@furman.edu

FOR SALE: VARIAN

Resonance Instruments has available:

- 1) replacement Klystrons for Varian EPR Bridges (at reduced prices) and other klystrons
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- 3) NMR Gaussmeter.

For more information on these units contact Clarence Arnow, President, Resonance Instruments. ☎: 1-847-583-1000; FAX: 1-847-583-1021; E-mail: rii@www.com.

NEED HELP in DESIGN and CONSTRUCTION of EPR ELECTRONICS?

The University of Denver can supply electronic design and construction services for EPR applications. Low-noise pulse amplifiers, low-noise 100 KHz preamplifiers, boxcar integrators, and pulse timing systems are available. We also supply a conversion kit to convert Varian field control units to voltage-controlled scan operation. A 6 digit 1 ppm frequency

counter is available in X-, C-, S- or L-band or Megahertz versions. Complete microwave/RF bridges from 150 MHz to L-, S-, or C-band are available from designs previously built and tested at the University of Denver. Contact Richard W. Quine, ☎: 1-303-871-2419; E-mail: rquine@du.edu.

AVAILABLE: USED VARIAN EPR EQUIPMENT

1) Two Varian E-3's are in the process of being refurbished. They will meet factory specifications and will come complete with a one-year warranty. The units may also include some upgrades.

2) Varian ENDOR accessory, with Varian ENDOR cavity.

3) Varian TM cavity with flat cell holders and flat cells.

4) Varian E-257 variable temperature controller with heater sensor and insert holder.

5) Varian E-272B field/frequency lock accessory.

For details, contact James Anderson, Research Specialties, 5629 N. Maplewood, Chicago, IL, 60659, USA; ☎/FAX: 1-773-728-6570.

Names from the IES Database Sorted by Country

The following list contains all the names from the database maintained by the International EPR(ESR) Society at the IERC in Urbana, Illinois. Those individuals who are members of the IES have their membership type inserted after their names. Please check your name for the correct membership type. If you know any of the individuals listed in your country, please encourage them to support the International EPR(ESR) Society by becoming a member.

Key to the Membership Codes:

FM— Full Member (Active in EPR/ESR/FMR); EM— Emeritus Member (Emeritus or retired status); PM— Postdoctoral Member; AM— Associate Member; SM— Student Member; HM— Honorary Member (these members are the IES Fellows—for a complete listing of Fellows, see page one of the *EPR Newsletter*); CS— Indicates either a Corporate Sponsor or a contact person for a Corporate Sponsor; UM— Unidentified membership type. If your name is followed by the code (UM), please contact the IERC (ierc@uiuc.edu) and let us know what the correct membership code should be.

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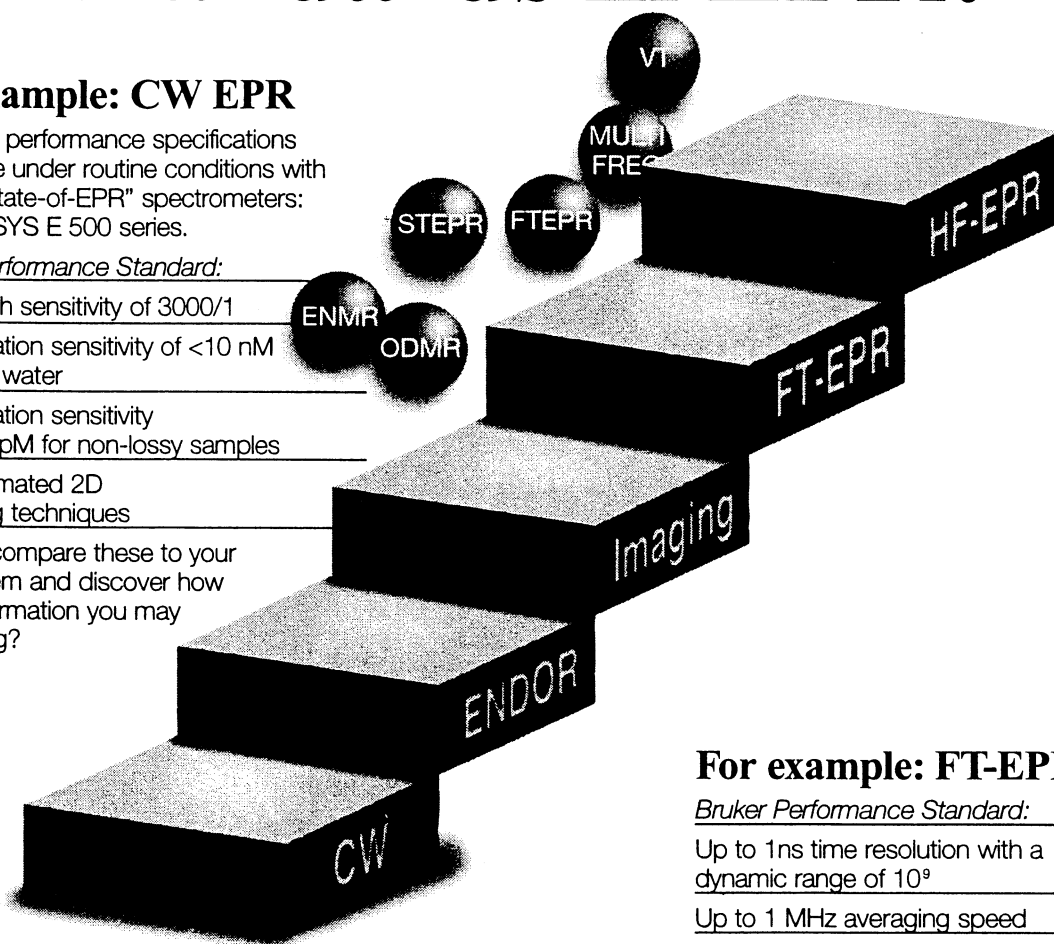
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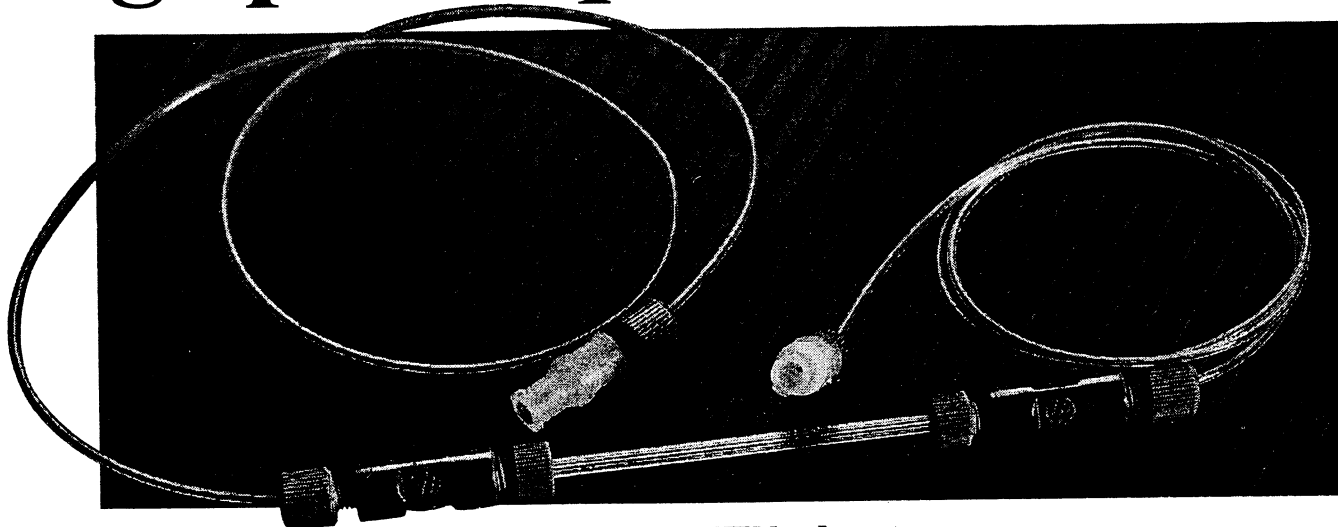
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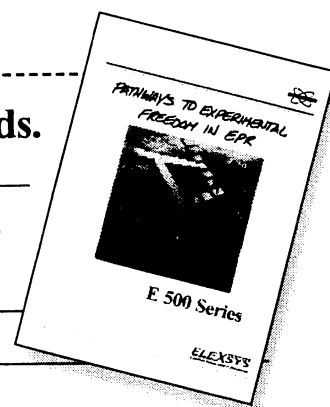
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EPR NEWSLETTER

Volume 11, Number 2

Page 1

2000

From the Editor—

All of you must be especially busy this year. Usually, we get some interesting scientific reports, technical tips, techniques, or guest editorial items to include in the EPR Newsletter. But submissions have been pretty sparse in the first part of this year, and most of our regular contributors will not be ready with new columns until later this year. So I'm making a special invitation to submit items or opinions.

With sadness I write that two of the most prominent magnetic resonance scientists - Herb Gutowsky and Mel Klein - passed away this year. I've known and admired them for a very long time. Mel Klein, biophysicist and Fellow of the IES, spent his career at Berkeley, CA. We were fellow graduate students there but became better acquainted later. He was a fine scientist and wonderful human being, and I am proud to count him as a good friend. His obituary appears in this issue.

Herb Gutowsky had come to this campus as an Instructor just a year before I started as a freshman; he was the teacher whose course convinced me to become a physical chemist. His early research group was full of excitement and discovery at every turn. This group's seminal work on chemical shifts and spin-spin coupling can fairly be said to have revolutionized the world of chemistry by discovering and demonstrating what wonderful things magnetic resonance could do for it. Most of his work was in NMR, but his group also did some EPR research. I remember his telling me that he decided not to pursue EPR research more vigorously simply because he thought that the British EPR scientists - Bleaney, Stevens, et al. - were already so far ahead of him that he wouldn't be able to compete to his standards. Much later, Herb turned to FT microwave spectroscopy of cluster molecules; he was prolific and highly successful in that, too. Active and enthusiastic till the end, his most recent paper was published about the date of his death, and he left draft material for at least three more. His life was celebrated in a memorial symposium held June 24 in Urbana, IL, and chaired by Bruce McGarvey.

R. Linn Belford, Urbana

•Newsletter Editor: R. Linn Belford, Urbana, IL
 •Assistant Editor, Becky Gallivan, Urbana, IL
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Prof. Lawrence J. Berliner,
Ohio State University

Silver Medal in Instrumentation:

Prof. Sankaran Subramanian,
National Cancer Institute, NIH,

Silver Medal in Physics/Materials Science:

Prof. Klaus-Peter Dinse,
Univ. of Darmstadt

Silver Medal in Chemistry:

Prof. Larry Kevan, University of Houston

YOUNG INVESTIGATOR: Jointly to

Prof. Bernard Gallez, Univ. of Louvain
 Dr. Karsten Mäder, Basel, Switzerland,
 F. Hoffmann-La Roche Ltd.

IES FELLOWS:

Prof. Noboru Hirota, Kyoto University

Prof. Anders Ehrenberg, Univ. of Stockholm

Prof. August H. Maki, Univ. Cal. at Davis

Prof. Bruce R. McGarvey,
University of Windsor, Canada

Prof. Tengiz Sanadze,
Tbilisi State University, Georgia

Full citations for all of these award winners will appear in a future issue of the *EPR Newsletter*.

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Obituary

Melvin P. Klein, IES Fellow. 1921-2000

The Society will join in mourning the loss of Mel Klein who suddenly passed away very recently. This tribute is a slightly edited version of a talk given in honour of Mel by his good friend, Professor Alex Pines.

Mel was born in Denver to an American mother and a Hungarian father. He attended, appropriately for half a Hungarian, the Teller Elementary School. As a young lad Mel displayed an early affinity for biology and physics, playing endlessly with both plants and baseballs. He went on to Aaron Cove Junior High where, by age 10, it had become clear that he was a prodigy with gadgets and electronics. He became a radio ham at age 11, infected his physics teacher with this non-kosher affliction and instituted a school radio club. It is told that the young Mel stalked the residents of his Denver neighborhood, confronting them in the streets, challenging them to give him a broken radio to fix--an early example of radio-frequency bugging. At East Denver High School Mel was an outstanding student and a much decorated scout leader. He attended Denver University, working at the same time as an "engineer" in local radio stations. When Dec. 7, 1941 came along he quickly found a job with the Army Air Corps at Logan Utah air base. Mel maintains that the Utah period was the only time in his life that he was a "gentile."

In 1941 Mel was sent from Logan to a subsidiary outpost at Las Vegas Nevada air base where he did a lot of flying in C-47s with outside temperatures of -60 or lower. He got a job with the Office of War information in San Francisco as an engineer. After a year in which he learned to love the bay area, he went to Washington, D.C. to a firm of consulting radio engineers. He was then transferred to the Harvard Radio Research Lab that worked on countermeasures to the MIT Radiation Lab's development of radar. A few months around there and he was attached to a group of civilian scientists/technicians who went to the Pacific attached to an intelligence section of MacArthur's headquarters, following him closely from Australia to New Guinea to the Philippines. During that period Mel learned physical optics and decided to learn more about physics and electromagnetic theory.

In 1945, back in Cambridge, Mel listened to Felix Bloch talk about an idea he had for doing "something magnetic." In fact, Bloch essentially offered Mel a GSRA at Stanford to work on this "thing." Mel remembers that he was not yet turned on to the idea of graduate school and hence, he reminisces, what became Bloch, Hansen and Packard could have been Bloch, Hansen and Klein.

After the war, Mel went to Dave Sloan's lab at Berkeley, where George Feher was also working at that time. Mel started school again, did the first year of medical school, and then switched to physics and biophysics. He finished the



Mel Klein (left) and Ken Sauer enjoy a break during a symposium held in their honor. (Berkeley, 1998)

degree in Physics and joined the Radiation Lab in 1952 in the electrical engineering department. During this period Mel became acquainted with the Alvarez group and spent some time at Livermore where he was involved with the rf for a giant proton LINAC. He learned about NMR as a way of measuring magnetic fields for a mass spectrometer being used for the measurement of Li isotope ratios. Looking at a table of spins and moments, Mel realized that NMR could also be used directly to obtain this ratio. Management concurred and bought the first Varian instrument for delivery to Livermore.

In 1959, Mel was awarded his Ph.D. in biophysics and Margaret came into Mel's life. They were married in 1960. That year, Bill Blumberg, one of Erwin Hahn's students, had gone to Bell Labs and in 1960 he invited Mel to come for a year. Mel was able to arrange the leave and the couple, Mel and Margaret, took off for a year-long honeymoon in Greenwich Village. The Labs were a super place and many friendships were forged, friendships that have lasted to this day. It was shortly after returning to Livermore in 1961, that George Barton and Mel came up with the idea of digital signal averaging from which we have all benefitted so immensely. In 1963 Melvin Calvin invited Mel to join his group in Berkeley to help strengthen the staff of the new Round House. Mel had a ball ever since, involved in an extraordinary range of activities, making important contributions to NMR, EPR, Mossbauer, ESCA, PAC, MCD, and microwave photoconductivity.

In 1973 Marvin Cohen invited Mel to a Gordon Conference on "Deep Level Spectroscopy." It was there that the first examples of EXAFS were presented. Mel came home knowing two problems that could be approached--the Mo in the nitrogenase enzyme system and the Mn in the oxygen evolving system. In 1975 EXAFS experiments were done at SSRL and it was there that Mel devised the fluorescence detection of EXAFS for his group's dilute samples. He has been working on the Mn problem ever since and he and his coworkers have established most of the known facts about the structure and oxidation states of the Mn

complex as it cycles through its five light induced states. The system displays a lovely synergy between EXAFS and EPR, and an equally lovely synergy between Mel Klein and Ken Sauer.

A Guggenheim Fellowship permitted Mel and family to spend the 1976-1977 academic year in Paris and a Humboldt Award took the family to Berlin for the 1988-1989 academic year, again resulting in wonderful friendships and new ideas for using XAS in biology.

One indication of Mel's influence and breadth is the spectrum of articles in the present issue of JPC. Another indication is the range of meetings he has attended, often as chair. Just a few examples--the ESCA meeting in Uppsala, Sweden, the Gordon Conference on Magnetic Resonance chaired by Mel, the conference on magnetic resonance in chemistry, biology and physics at Argonne, the Japan conference on photosynthesis and oxygen evolution, the conference on metals in biology, and the Gordon Conference on photosynthesis.

Mel Klein has educated generations of students and postdocs, many of whom have gone on to stellar careers, and he has been and remains an enduring inspiration to us all. Mel Klein was honoured last year with Fellowship of the Society and he endeared all of us who attended the EPR Symposium in Denver with his stories of the past, his wit and humour and his unflagging interest in difficult problems in science.

This tribute to Mel ends with a direct quote from Alex Pines, "Dear Mel, I am sure that I write on behalf of all your students and colleagues when I say that you earned our love and our respect. All the bypasses in the world could not change the integrity and the warmth of your heart."

John Pilbrow
President, IES

◆ IES AFFAIRS ◆

ANNOUNCEMENTS AND REPORTS FROM
THE INTERNATIONAL
EPR (ESR) SOCIETY

From the President—

Congratulations to Erwin Hahn

On behalf of the IES, I wish to extend congratulations to Erwin Hahn, IES Fellow, on his recent election as a Foreign Member of the Royal Society of London. This is a great honour and well deserved!

John Pilbrow,
President IES

Awards 2000

It is likely that by the time you read this, presentation of most of this year's awards will have taken place during the 23rd International EPR Symposium in Denver. Full details with photographs and citations will appear in forthcoming issues of the EPR Newsletter.

I want to thank those who made nominations for each of the awards and for the committees that worked so diligently to make the decisions.

You will see that there is a call for nominations for 2001 awards in this issue and this will be repeated in the next issue. By bringing the closing date forward to 15 November, a full two months ahead of this year's process, we should have plenty of time to arrange presentations at major conferences next year. In particular, the organisers of ISMAR next year in Israel have expressed the hope that at least our Gold Medal presentation might take place during that meeting.

Two new Vice-Presidents

Members will be pleased to know that Professors Sandy Eaton and Kev Salikhov have been elected unopposed as the two additional Vice-Presidents required under the new Constitution. They will hold office, along with the other Office Bearers, until 30 September 2002. Thus we have now have fairly wide geographic representation on the Executive.

Finance & Subscriptions

Following the Denver Symposium I plan to spend Friday August 4th in Milwaukee with Treasurer, Chris Felix, in order to run over all aspects of budgeting and finance. I hope that the next report from the Treasurer will show considerable improvement in subscription payments (or dues) by all members. The Executive will consider what steps can be taken to improve the situation. As I have said before, we are unable to take some desirable initiatives until we have a reasonable bank balance at all times.

General Meeting of the Society

A General Meeting will be held during the Denver Symposium. I invite suggestions as to particular topics that should be discussed. For insight into what might be appropriate, you may consult the previous Newsletter [11/1] which reported on the General Meeting held last August.

ISMAR

I have recently been in correspondence with Professor John Waugh, President of ISMAR, to explore ways in which the two societies can cooperate. The matters I raised will be discussed by the next ISMAR Council Meeting. In particular we have offered to assist with the EPR section of

ISMAR conferences in the future. Already this year I have provided informal advice to our colleagues in Israel responsible for the EPR section of next year's conference.

The Society is 10 Years Old this Year!

It is gratifying to look back on the ten year history of our Society, to realise that the motivation for establishing it in the first place, is as relevant today as it was then. We are in the debt of Founder President, Hal Swartz, and those who supported him ten years ago.

But after 10 years we do need to review the service we provide to members. What members get for what is still a modest subscription is the quarterly EPR Newsletter and the annual extended mailing list of those associated with or involved in EPR. Thanks are due to the Newsletter Editor, Linn Belford, ably backed up by Becky Gallivan in the Office in Urbana, for developing the format and preparing copy for each issue. There is a problem with regard to the Newsletter. We rely on contributions from members and it should not just rely on those who have taken major responsibility over the years. What about writing up some interesting ideas, recent experiments or fascinating history to share with your international colleagues in the Society? The Editor would be pleased to hear from you.

The Society will need to look at ways of taking greater advantage of internet communication. We already use email for subscription reminders and voting for office bearers for those members with active email addresses.

I look forward to seeing many of you in Denver next month where I will present several awards, chair the General Meeting of the Society and listen intently to feedback from the EPR community and to attempt to recruit some new members.

John Pilbrow, President

Of Special Note:

Please note that payments made by credit card to IES Treasurer, Dr. Chris Felix, need to **include expiration date** of the credit card. This blank was omitted on the new version of the application/payment form in Vol. 11 #1.

Problems with Editor R. Linn Belford's e-mail address have caused it to be changed to : **rbelford@uiuc.edu**. Mail sent to old address June 1 and after would not have been delivered.

Deadline for Newsletter Materials

for Volume 11 Number 4: October 31, 2000

Publishable items arriving after this deadline may be held over for the next issue.

IES Awards —

Call for Year 2001 IES Awards Nominations—

Confidential nominations for all 2000 awards are to be sent directly to the President, International EPR Society, Prof. John Pilbrow, Monash University, Dept. of Physics, Clayton Victoria, Australia 3800 by **November 15, 2000**. Nominations must include a draft citation of about 150 words on the nominee that may be used in the *EPR Newsletter* if the nominee is selected to receive an award, and sent in an envelope marked "Confidential: to be opened by addressee only." Alternatively, nominations and the accompanying 150 word citation may be sent either as an e-mail text message or as an attachment in RTF format readable on a PC to the following e-mail address:

john.pilbrow@sci.monash.edu.au

We repeat here the Society's award policies: Awards are not restricted to IES members, but the committees may take membership into account when deciding on the award winners.

The ***IES Gold Medal*** is the premier award of the Society and it stands with the Bruker and Zavoisky Prizes as being one of the three major awards recognising outstanding achievements in EPR. Nominations may be made in any field of EPR, though the Gold Medal Committee will be mindful of the areas of the Bruker and Zavoisky Awards for that year.

Silver Medals: There are four Silver Medals to be awarded annually. These are in the following categories:

Chemistry,
Physics/Materials Science,
Instrumentation, and
Biology/Medicine.

Young Investigator Awards: There is one Young Investigator award each year. To be eligible, nominees must be under 35 years of age on January 1 of the award year.



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Fellows of the Society: The title of Fellow of the Society will be conferred on those who have made truly outstanding contributions in EPR theory and practice. It is intended for particularly distinguished scientists (hopefully, IES members) who are either retired or are close to retirement. As the highest international standards are to be applied to the recognition of those worthy of this distinction, their formal connection with the Society will enhance its own image.

Late nominations for IES awards will not be considered. It is the intention of the Executive to stick to a strict timetable to provide ample time to arrange appropriate award presentations at major conferences later in the year.



Yuri Tsvetkov receiving the IES Silver Medal for Chemistry from John Pilbrow at the 2nd Asia-Pacific EPR Symposium in Hangzhou, China, October 31st-November 4th, 1999. The citation appears on page 3 of the EPR Newsletter Vol. 10, No. 3 (1999).

Previous IES Awards Winners—

IES Gold Medal:

1992-George Feher; 1993-James Hyde;
1994-Jack Freed; 1995-Sam Weissman (Chemistry);
1996-Kev Salikhov (Physics & Instrumentation);
1997- Harden M. McConnell (Biology & Medicine);
1998-Arthur Schweiger (Chemistry);
1999-Brian Hoffman; 2000-Wayne L. Hubbell.

IES Silver Medals Biology/Medicine:

1994-Hal Swartz; 1995-Lev Blumenfeld; 1996-Ron Mason; 1997-Anatole Vanin; 1998-Ed Janzen;
1999-Jack Peisach; 2000-Lawrence J. Berliner.

IES Silver Medals Chemistry:

1994-Keith McLauchlan; 1995-Clyde Hutchison; 1996-Klaus Möbius; 1997-Hanns Fischer; 1998-Richard W. Fessenden; 1999-Yuri Tsvetkov; 2000-Larry Kevan.

IES Silver Medals Instrumentation:

1994-Wojciech Froncisz; 1995-Jan Schmidt;
1996-Johann-Martin Spaeth; 1997-Roger Isaacson;
1998-William B. Mims; 2000-Sankaran Subramanian.

IES Silver Medals Physics/Materials Science:

1999-George Watkins; 2000-Klaus-Peter Dinse.

Young Investigator Awards:

1994-Devkumar Mustafi (Univ. Chicago);
1995-R. David Britt (Univ. California); 1996-Gunnar Jeschke (Univ. Bonn); 1997-Robert Bittl (Techn. Univ. Berlin); 1998-Alex Smirnov (Univ. Illinois); 1999-Ilya A. Shkrob (Argonne National Lab); 2000-Joint Awards to Bernard Gallez (University of Louvain) and Karsten Mäder (F. Hoffmann-La Roche Ltd.).

New IES Fellows for 2000

Noburo Hirota, Anders Ehrenberg, August H. Maki, Bruce R. McGarvey, Tengiz Sanadze.

A listing of the *Fellows of the Society prior to 2000* appears on page 1.

NOTICES of MEETINGS

NOTICE: NOTICES AND UPDATES ABOUT SOME MEETINGS ARE NOT PRINTED IN THIS COLUMN IF THE INFORMATION ARRIVES TOO LATE OR IF SPACE IS LIMITED. BUT SUCH MEETINGS MAY BE ANNOUNCED ON THE EPR NEWSLETTER WEB SITE WITH LINKS TO DETAILED CONFERENCE INFORMATION WHERE POSSIBLE. CONTACT IERC@UIUC.EDU TO HAVE YOUR MEETING ADDED-

<http://ierc.scs.uiuc.edu/news.html>

42nd ROCKY MOUNTAIN CONFERENCE on ANALYTICAL CHEMISTRY; 23rd INTERNATIONAL EPR SYMPOSIUM, Broomfield, Colorado, July 30-August 3, 2000.

The 23rd International EPR Symposium is in Broomfield, Colorado (a suburb of Denver), July 30 - August 3, 2000 at the Omni Interlocken Resort, in conjunction with the 42nd annual Rocky Mountain Conference. About 150 people participate in the EPR Symposium each year, presenting over 100 papers. Approximately 1000 people attend the Rocky Mountain Conference, which also includes an NMR Symposium and instrument exhibit. The Omni is a new hotel that was specifically designed for conferences this size. Hotel information is available at:

<http://www.milestoneshow.com/rmcac>

The International EPR Symposium covers all aspects of EPR spectroscopy and there are contributions in all

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areas. This year there are special sessions on industrial applications of EPR organized by Reef Morse (reef@xenon.che.ilstu.edu) and on *in vivo* EPR organized by Murali Krishna (murali@helix.nih.gov). Dr. Paul Strudler, NIH, will give a lecture entitled "Navigating the Bay of Funding" followed by a discussion session. Lectures and posters are scheduled from Monday am (July 31st) through Thursday noon (August 3rd).

We invite you to participate in the EPR Symposium. Researchers are encouraged to present unpublished results and tentative conclusions to stimulate discussion. We suggest that you consider presentations in the poster sessions, which have proven to be an excellent forum for exchange of ideas. The book of abstracts for the Rocky Mountain Conference will be prepared electronically (see instructions at: <http://www.milestoneshow.com/rmcac>). In addition to the electronic submission, please send three hard copies of your abstract directly to us for use in preparing the preliminary program.

Sunday, July 30th Bruker Instruments is sponsoring a tutorial Second Workshop on Pulsed EPR at the University of Denver, followed by an open house at the University of Denver EPR labs. Lunch is provided by Bruker Instruments and transportation for each event is provided to and from the Omni. Details are available at

<http://www.du.edu/~seaton/workshop.html>

Please inform Dr. Arthur Heiss (e-mail: ah@bruker.com; Fax: 978-670-8851) if you will attend.

We hope that you will be able to come to the 2000 EPR Symposium. Updated information on the conference, including the preliminary program, is posted

on our web page:

<http://www.du.edu/~seaton/eprsym.html>

The topics "Industrial Applications of EPR" and "Low Frequency *in vivo* EPR and Imaging" have been selected for special issues of Applied Magnetic Resonance. These issues will contain regular peer-reviewed papers and will not be "proceedings" of the Symposium. One can contribute to these journal issues whether or not presentation was made at the Symposium. Regular papers on these topics should be sent to the Eatons, who will edit these special issues. Please tell us whether you wish to submit a paper. Prof. Gareth R. Eaton, ☎: 1-303-871-2980, e-mail: geaton@du.edu; Prof. Sandra S. Eaton, ☎: 1-303-871-3102, E-mail: seaton@du.edu.

SECOND PULSED EPR WORKSHOP and OPEN HOUSE, University of Denver, Denver, Colorado, July 30, 2000.

On Sunday, July 30, 2000, Bruker Instruments and The University of Denver present the Second Pulsed EPR Workshop. The Workshop is held on the University of Denver campus in the F. W. Olin Hall (same location as the First Workshop). The extent of the content and the overall level are decreased substantially, based on the experience last year that the First Workshop was too long and at too high a level. The Second Workshop is designed to be very tutorial relative to the 1999 Workshop.

Schedule for Sunday, July 30, 2000

- 0900 bus from conference hotel to DU for people who will attend the Workshop;
 - 0945 coffee in atrium of Olin Hall
 - 1000 Workshop begins in lecture room in Olin Hall (same as last year)
 - 1200 second bus from conference hotel to DU, for additional people who will attend lunch and the afternoon demonstrations
 - 1300 lunch in the atrium of Olin Hall
 - 1400 Bruker presentation, in lecture room in Olin Hall
 - 1500 Open House and demonstrations in EPR lab in S.G. Mudd
 - 1630 Ice cream and cookies served in atrium of S. G. Mudd
 - 1730 buses return to conference hotel
- Workshop Outline – Second Pulsed EPR Workshop*
- 0945-1000 Coffee in the Atrium
 - 1000-1030 Survey of the types of problems EPR can solve, and how pulsed EPR can solve them better than CW can, to provide the incentive for the tutorials to be presented – Gareth R. Eaton
 - 1030-1130 Introduction to pulsed EPR – the physical basis for the Hahn echo – Dr. Ralph T. Weber
 - 1130-1145 break

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1145-1230 T_m and ESEEM elementary principles and demonstrations with Mathcad calculations (using computer projection in the lecture room) – Gareth R. Eaton, Sandra S. Eaton, and Ralph T. Weber—The Mathcad programs will be available on the Eaton web site for attendees to use at home following the Workshop

1230-1300 General question and answer period – Panel consisting of Gareth R. Eaton, Sandra S. Eaton, and Ralph T. Weber and Peter Höfer

1300-1400 Lunch

Afternoon Demonstrations

- E580 2-pulse, 3-pulse, FT EPR
- The DU/Bruker 250 MHz Eleksys spectrometer
- Other spectrometers in the Eaton lab

Expecting that people who are now using pulsed EPR may not choose to attend the morning tutorial, there will be a second bus from the Omni to the University to bring additional people at lunch time. All EPR Symposium attendees are invited to lunch and the afternoon demonstrations. Buses will return people to the Omni by ca. 6:30 pm. Please inform Dr. Arthur Heiss (ah@bruker.com or fax: 978-670-8851) if you plan to attend.

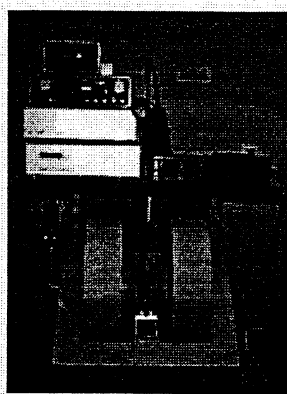
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www.du.edu/~seaton/eprsymp.html

XIXth INTERNATIONAL CONFERENCE on MAGNETIC RESONANCE in BIOLOGICAL SYSTEMS (XIX ICMRBS), Florence, Italy, August 20-25, 2000.

You are cordially invited to attend the XIXth International Conference on Magnetic Resonance in Biological Systems (XIX ICMRBS) to be held in Florence, Italy from August 20 to 25, 2000. Florence is easily accessible both by train (ca. 1.5 hrs from Rome by fast train) and by plane. The airport, located 5 Km from the city center, is connected, through direct flights, with the major Italian and European cities.

Scientific Program—The scientific program will cover a wide range of research topics in the field of magnetic resonance applied to biological systems. Particular attention will be devoted to new and promising areas of research as well as to emergent methodological tools within the frame of NMR research in the post-genomic era. The scientific agenda will include plenary lectures, session lectures and poster presentations. The sessions will be organized on the following topics: protein structure, folding, and mobility; EPR/ENDOR applications; membrane proteins; In vivo spectroscopy and imaging; DNA, RNA, nucleotides and their interaction with proteins; SAR of drugs and drug discovery; computation and dynamics.

Location—The conference will take place at the Centro



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Internazionale Congressi and Palaffari Firenze located close to the central railway station in the historical and monumental area of Florence.

Accommodation—Accommodation will be arranged in hotels of different categories, mostly within walking distances from the venue (student dorms will be available). Detailed information and reservation forms for accommodation will be included in the second circular.

Change of Address—Information on the scientific program, accommodation, general arrangements, registration forms and instructions for preparation of abstracts are continuously updated in our web site. Please visit it! Registration can be done on line. For further information, please contact the XIX ICMRBS Secretariat, Dept. Chemistry & CERM, Univ. Florence, Via Luigi Sacconi 6, I-50019 Florence, Italy; ☎: 39-055-4209260; Fax: 39-055-4209253; E-mail: icmrbs@cerm.unifi.it. Or visit the web address at:

<http://www.cerm.unifi.cnr.it/icmrbs.html>

Conference Committees: *Organizers:* I. Bertini, (Florence, Italy) Chairperson; L. Banci (Florence, Italy) Ex. Manager; R. Kaptein (Utrecht, The Netherlands); H. Rueterjans (Frankfurt, Germany); G. Valensin (Siena, Italy). *Assistants to the organizers:* R. Del Conte & I.C. Felli (Florence, Italy); Treasurer: P. Turano (Florence, Italy). *International Advisory Board:* A.S. Arseniev (Moscow, Russia); C.M. Dobson (Oxford, U.K.); S. Forsen (Lund, Sweden); G. Govil (Bombay, India); A.M. Gronenborn (Bethesda, USA); C.W. Hilbers (Nijmegen, The Netherlands); J.S. Hyde (Milwaukee, USA); C. Ho (Pittsburgh, USA); M. Kainosho (Tokyo, Japan); J.F. Lefevre (Strasbourg, France); J.L. Markley (Madison, USA); A. McDermott (New York, USA); K. Möbius (Berlin, Germany); R.S. Norton (Parkville, Australia); S.J. Opella (Philadelphia, USA); M. Rico (Madrid, Spain); J. Seelig (Basel, Switzerland); B.D. Sykes (Edmonton, Canada); W. Tang (Nanjing, China); G. Varani (Cambridge, U.K.); A. Walker (Tucson, USA).

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National Organizing Committee: Coordinator: A. Rosato (Florence, Italy); S. Aime (Torino); R. Basosi (Siena); R. Bazzo (IRBM); F. Conti (Roma); A. Di Nola (Roma); A. Lai (Cagliari); S. Mammi (Padova); B. Maraviglia (Roma); C. Marchioro (Glaxo); G. Martini (Firenze); H. Molinari (Verona); V. Pavone (Napoli); A. Perico (CNR, Italy); F. Podo (Ist. Sup. Sanita); A. Rigo (Padova); A.L. Segre (CNR); A. Spisni (Parma); M. Tato' (Pharm.& Upjohn); P.A. Temussi (Napoli); A. Tomasi (Modena); A. Tramontano (IRBM); F. Uggeri (Bracco); L. Zetta (CNR). *Chairperson of Local Organizing Committee:* R. Pierattelli (Florence, Italy).

6TH INTERNATIONAL SYMPOSIUM on SPIN TRAPPING: "SPIN TRAPS, NITROXIDES and NITRIC OXIDE SPECTROSCOPY, CHEMISTRY and FREE RADICAL BIOLOGY," Marseille, France, August 27-31, 2000.

Tentative Topics—The Scientific Committee has selected a broad range of topics: •Synthesis of novel nitroxides; •Synthesis of novel nitrones and nitroso spin traps; •Synthesis of nitric oxide and peroxyxynitrite donors; •Nitric oxide and peroxyxynitrite traps; •Spin trapping of superoxide and nitric oxide derived from nitric oxide synthases; •*In vivo* trapping of nitric oxide; •Pharmacokinetics of spin traps and spin adducts, bio-reduction of nitroxides; •Nitroso hemoglobin; •Nitron traps: antagonists of neuronal injury, ALS, and neurodegenerative diseases; •Chemistry and biology of nitroxyl anion.

Location—It is a great honour that Marseille has been chosen as the conference site. Marseille has a reputation for hospitality towards people from all nations. Its geographic location and ready accessibility offer a convenient and pleasant setting to host an international meeting.

We hope to match the excellence of the scientific sessions with an enjoyable and memorable social programme. We look forward to seeing you in Marseille in the year 2000.

Scientific Committee: A. Alberti (*Univ. Bologna, Italy*); O. Augusto (*Univ. São Paulo, Brazil*); M. Davies (*Heart Research Inst. at Sydney, Australia*); B.C. Gilbert (*Univ. York, UK*); L. Greci (*Univ. Ancona, Italy*); K.U. Ingold (*Natl. Research Council at Ottawa, Canada*); B. Kalyanaraman (*Medical Coll. Wisconsin, USA*); K. Makino (*Univ. Kyoto, Japan*); R.P. Mason (*NIEHS, USA*); A. Rassat (*Ecole Normale Supérieure, Paris, France*); A. Tomasi (*Univ. Modena, Italy*); P. Tordo (*Univ. Provence, Marseille, France*); J.L. Zweier (*Johns Hopkins Medical Inst., Baltimore, USA*).

Local Organization: Prof. Paul Tordo and the memberships of *VMR 6517 "Chimie, Biologie et Radicaux Libres"* (association CNRS and Aix-Marseille 1 & 3 Universities).

Congress Secretariat: Atout Organisation Science, 6th International Symposium on Spin Trapping, 106 Corniche Kennedy, 13007 Marseille, France;

☎: 33-0-4-91-52-75-10; FAX: 33-0-4-91-52-93-73; E-mail: atoutsci@atout-org.com; or, for full meeting information visit the Congress web-site:

www.up.univ-mrs.fr/~wsrep/spin.trapping.meeting.html

AMPÈRE SUMMER SCHOOL on "APPLICATIONS of MAGNETIC RESONANCE in NOVEL MATERIALS," Nafplio, Peloponnese-Greece, September 3-9, 2000.

The Ampère Summer School on "Applications of Magnetic Resonance in Novel Materials" will be held at Nafplio (Peloponnese-Greece) 3-9 September 2000. The scope of the School is to introduce magnetic resonance techniques and their use in the investigation of current topics of Materials Science: 1) Disordered Systems and Glassy Materials; 2) Liquid Crystals; 3) Modulated and Incommensurate Systems; 4) Novel Electronic Conductors; 5) Ferromagnetic and Paramagnetic Systems; 6) Porous Systems; 7) Imaging of Materials; and 8) Bio-materials. Apart from NMR and MRI techniques, EPR and Mössbauer Spectroscopy will be also introduced.

The scientific program includes invited plenary lectures, oral and poster contributions. Young scientists are strongly encouraged to participate in the school and

present their research activities in oral and poster contributions. The following lecturers will present one-hour plenary lectures: •Prof. Jerzy S. Blicharsky (*Krakow, Poland*); •Prof. Robert Blinc (*Ljubljana, Slovenia*); •Prof. Bernhard Blumich (*Aachen, Germany*); •Prof. Ferdinando Borsa (*Ames, Iowa*); •Prof. Detlef Brinkman (*Zürich, Switzerland*); •Prof. H. J. M. De Groot (*Leiden, Netherlands*); •Dr. Jannis Deligiannakis (*Athens, Greece*); •Prof. Jani Dolinsek (*Ljubljana, Slovenia*); •Prof. Franz Fajars (*Dortmund, Germany*); •Dr. Jorge Luis Gavilano (*Zürich, Switzerland*); •Prof. Clare Gray (*NY, USA*) -not yet confirmed; •Prof. Mladen Horvatic (*Grenoble, France*); •Prof. Kazushi Kanoda (*Tokyo*)-not yet confirmed; •Prof. Raymond Kind (*Zürich, Switzerland*); •Prof. Serge Lacelle (*Quebec, Canada*); •Prof. Fanny Milia (*Athens, Greece*); •Prof. Pierre Panissod (*Strasbourg, France*)-not yet confirmed; •Prof. Moshe Paz-Pasternak (*Tel Aviv, Israel*); •Prof. Vasilis Papaefthymiou (*Ioannina, Greece*); •Dr. Josef Roos (*Zürich, Switzerland*); •Dr. Josef D. Seymour (*Albuquerque, USA*); •Prof. Jan Stankowski (*Poznan, Poland*); •Prof. Josef Zwanziger (*Indiana, USA*).

The School will be held at XENIAS PALLAS hotel, which rises above the town of Nafplion, at the southern coast, and is built in the middle-age castle of Akronafplia. Social and cultural events, as well as an official dinner will be arranged for the participants and the accompanying persons. For on-line registration and more information about the summer school and the town of Nafplion, please visit the web site of the Summer School at:

www.ims.demokritos.gr/nmrlab/conference/

For more information, please E-mail G. Papavassiliou
gpapav@ims.demokritos.gr

33rd ANNUAL INTERNATIONAL MEETING ESR GROUP of the ROYAL SOCIETY of CHEMISTRY and 4th MEETING of EUROPEAN FEDERATION of EPR GROUPS (EFEP). A COMBINED MEETING on PROSPECTS for EPR SPECTROSCOPY in the 21st CENTURY, September 10-14, 2000, John Innes Centre, University of East Anglia, Norwich, UK.

Scientific Programme. The scientific programme of the meeting will cover the topic of "Prospects for EPR Spectroscopy in the 21st Century." The meeting will consist of a series of invited lectures and poster presentations. The following speakers have so far

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accepted invitations to present lectures, and their tentative titles are: •Riccardo Basosi, Siena, Italy – *Recent Advances in Computer Aided EMR of Biological Systems in Solution*; •Marina Brustolon, Padova, Italy – *Radicals and photoexcited states of fullerene derivatives studied by cw and pulsed EPR*; •P. Dinse, Darmstadt, Germany – *Atoms in chemical traps - a playground for EPR spectroscopists*; •Jack Freed, Ithaca, USA – *A perspective of modern ESR in the study of molecular dynamics*; •Georg Gescheidt, Basel, Switzerland – *Borderline Cases to Drugs: Organic Radicals Studied by Paramagnetic Resonance*; •Daniella Goldfarb, Rehovot, Israel – *Awaiting title*; •Didier Gourier, Paris, France – *Bistable Electron Magnetic Resonance: the most elementary case of bistable memory effect in the interaction of a two-level quantum system with an electromagnetic field*; Gunter Grampp, Graz, Austria – *Kinetics of inter- and intramolecular electron transfer reactions measured by ESR linebroadening effects*; Edgar Groenen, Leiden, Netherlands – *The electronic structure of the metal site in blue-copper proteins*; Gunnar Jeschke, Mainz, Germany – *Structure determination of synthetic macromolecule-metal complexes by EPR and molecular modelling techniques*; Adam Jezierski, Wroclaw, Poland – *The environmental aspects of free radical reactions in some natural materials*; Reinhard Kappl, Homburg, Germany – *Characterisation of Structural, Dynamic and*

Electronic Properties of Metal Centers in Proteins by High-resolution EPR Techniques; David Lowe, Norwich, UK – *Paramagnetic Resonance at the John Innes Centre*; Wolfgang Lubitz, Berlin, Germany – *Radicals, Radical Pairs and Triplet States in Photosynthetic Reaction Centers Studied by CW and Pulsed EPR/ENDOR Technique*; David J. Lurie, Aberdeen, UK – *Imaging Free Radicals In Vivo by Overhauser Techniques*; Derek Marsh, Gottingen, Germany – *Developments in Non-Linear EPR Spectroscopy for Spin Label Applications to Biological Membranes*; Keith McLauchlan, Oxford, UK – *Problems in Triplet Mechanism Spin Polarization*; Klaus Möbius, Berlin, Germany – *Multifrequency high-field EPR and ENDOR on protein structure and dynamics: Recent accomplishments and future plans*; Damien Murphy, Cardiff, UK – *Understanding mechanistic pathways in enantioselective homogeneous catalysis by combined ENDOR and computer modelling techniques*; Andreas Poepl, Leipzig, Germany – *ESR, ENDOR, and ESEEM Studies of Paramagnetic Adsorption Complexes in Zeolites*; Oleg Polouektov – *High Frequency EPR Spectroscopy: History, Development, Applications*; Brian Roberts, London, UK – *ESR studies of sulfur-containing radicals in solution*; Graham Smith, St. Andrews, UK – *Awaiting title*; Lev Weiner, Weizmann Institute of Science, Israel – *Site directed spin labeling study of enzymes structure and folding*; Nicola D. Yordanov, Sophia, Bulgaria – *Some applications of EPR to environmental problems*.

The conference will commence with registration at UEA on Sunday afternoon, followed by dinner on the UEA campus in the evening. This will be followed by a reception and private viewing at the Sainsbury Centre Gallery within the grounds of the University of East Anglia. Lectures of 30 or 40 minutes duration will take place in the morning or afternoon in the conference Centre at the John Innes Centre. There will be ample time for informal discussions during the scheduled coffee and lunch breaks. The abstracts to each lecture will be

posted onto the web as soon as they become available.

Discussion Forum. In addition to the traditional presentation of lectures at the meeting, there will also be two open forum discussion sessions. Each discussion session will be chaired by a distinguished scientist in that field. The two chairpersons for this year's Discussion Forum and the titles of the sessions are: Session I (Chairman A. Tomasi, Modena, Italy) – *EMR Techniques in Biomedical Fields; Do they work?*; Session II (Chairman A. Schweiger, Zürich, Switzerland) – *Advanced EMR Techniques; Are they worth the effort?* The Forums will commence with four short oral communications from the conference participants. Each communication will be of 5 minutes duration, which must be relevant to the topic of the Forum session. The floor is then open to discussion on the presented talks or any points of relevance to the particular topic. The purpose of these short communications is therefore to crystallise and instigate an interesting discussion among the leading scientists in this field.

The Bruker Lectureship 2000. Bruker Analytische Messtechnik GmbH generously sponsor an annual award to be given by a scientist who has made major contributions in the development and/or use of EPR spectroscopy. This award is presented at the annual conference of the ESR group of the RSC and follows a plenary lecture given by the distinguished recipient. This Lectureship for 2000 has been awarded to Dante Gatteschi, University of Florence, Italy.

Poster Presentations. Participants are invited to make a poster presentation. Ample time has been set aside for poster displays, which will be an important and integral part of the meeting. A small drinks reception will be held during the session, to (hopefully) create an informal atmosphere and generate interesting discussions. Those wishing to present a poster must send details of their contribution (preferably by email), typed neatly on one sheet of A4 size paper (30 x 21 cm) giving Title, Authors, Name of Institution and Abstract. The abstracts will be reproduced for distribution to all conference participants. In addition, abstracts submitted in electronic format will be displayed on the web prior to the meeting.

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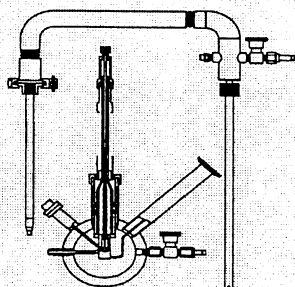
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Authors that would prefer not to have their abstracts displayed on the web should indicate so in their covering letter. The absolute deadline for submission of the Poster Abstracts is 31 July 2000. Abstracts should be clearly marked Poster Abstracts and submitted to Dr. D.M. Murphy, Department of Chemistry, Cardiff University, PO Box 912, Cardiff CF10 3TB, UK; e-mail: MurphyDM@cardiff.ac.uk; ☎: 44 (0)1222 875850 or 874080 Fax; 44 (0) 1222 874030.

Location and Accommodation. The meeting will be held at the University of East Anglia (UEA) and John Innes Centre in Norwich. The historical town of Norwich is on the main East Coast Line from London Kings Cross train station, with regular train services (journey lasts approx. 2 hrs). Norwich is also accessible by Air, with regular flights from Amsterdam. All accommodation will be at UEA, with both standard and en-suite rooms available. UEA is situated about 15 minutes walk from the Conference Centre at the John Innes Centre, where all lectures/poster presentations will take place.

Application and Registration. Further extended details, general information and registration forms are available on the conference web page:

<http://www.cf.ac.uk/esr/norwich.html>

All application forms, abstracts or requests for further information should be sent to Dr. D.M. Murphy, Department of Chemistry, Cardiff University, PO Box 912, Cardiff CF10 3TB, UK. E-mail: MurphyDM@cardiff.ac.uk; ☎: 44 (0)1222 875850 or 874080; Fax: 44 (0) 1222 874030.

34th ANNUAL INTERNATIONAL MEETING of the ESR GROUP of the ROYAL SOCIETY of CHEMISTRY. "ESR Spectroscopy; Recent Advances and Applications", March 31 to April 4, 2001, University of Bristol, UK.

The 2001 Conference of the ESR group of the Royal Society of Chemistry, will take place from Sunday 31st March to Thursday 4th April 2001, in Wills Hall at the University of Bristol, UK. The conference will be located in a planned Conference Centre, with both ensuite and standard rooms available.

The conference, titled "ESR Spectroscopy; Recent Advances and Applications," will cover all aspects of ESR in biology, chemistry and physics. The format of the meeting will consist of a number of plenary lectures (of 50 minute duration) followed by a series of short oral presentations (of 20 minute duration). Applicants interested in making an oral presentation at the conference, can do so by sending an abstract to the secretary of the group prior to the meeting. It is envisaged that a number of student bursaries will also be available.

The following speakers have so far agreed to give plenary lectures at the meeting:

Prof. J. Hutterman, Homburg, Germany (the Bruker Lecture); Dr. Barney Bales, California State University Northridge, USA "Application of Precision EPR to Problems in Colloid Chemistry"; Dr. Gerard W. Canters, Leiden University, The Netherlands; Prof. Neil Connelly, University of Bristol, UK "ESR Spectroscopy and Organometallic Electrochemistry"; Prof. M.C.W. Evans, University College London, UK "Electron transfer processes in oxygenic photosynthesis"; Prof. Bruce C. Gilbert, University of York, UK; Prof. Wayne Hubbell, University of California Los Angeles, USA "Site-directed spin labelling approaches protein structure and dynamics"; Dr. Paul J. Krusic, DuPont Co., Wilmington, USA, "From Buckyballs to gas-phase ESR"; Dr. John Maher, University of Bristol, UK, "EMR in Bristol: the last 10 years!; the next 10 years?"; Dr. Mark Newton, King's College London, UK "ESR, ENDOR and optical studies of radiation damage defects in diamond"; Prof. Christopher Rhodes, Liverpool John Moores University, UK "Hydrocarbon Activation in Zeolites"; Dr. Alex I. Smirnov, Illinois EPR Research Centre, USA;

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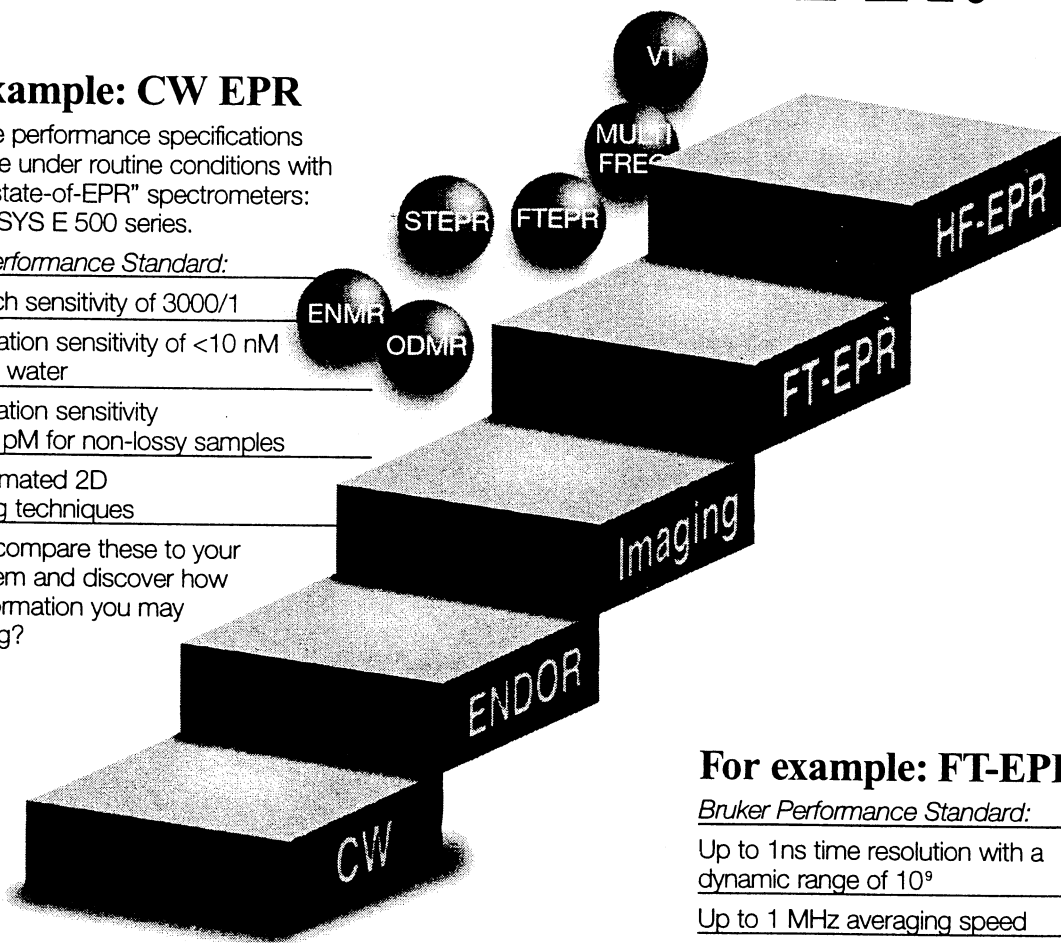
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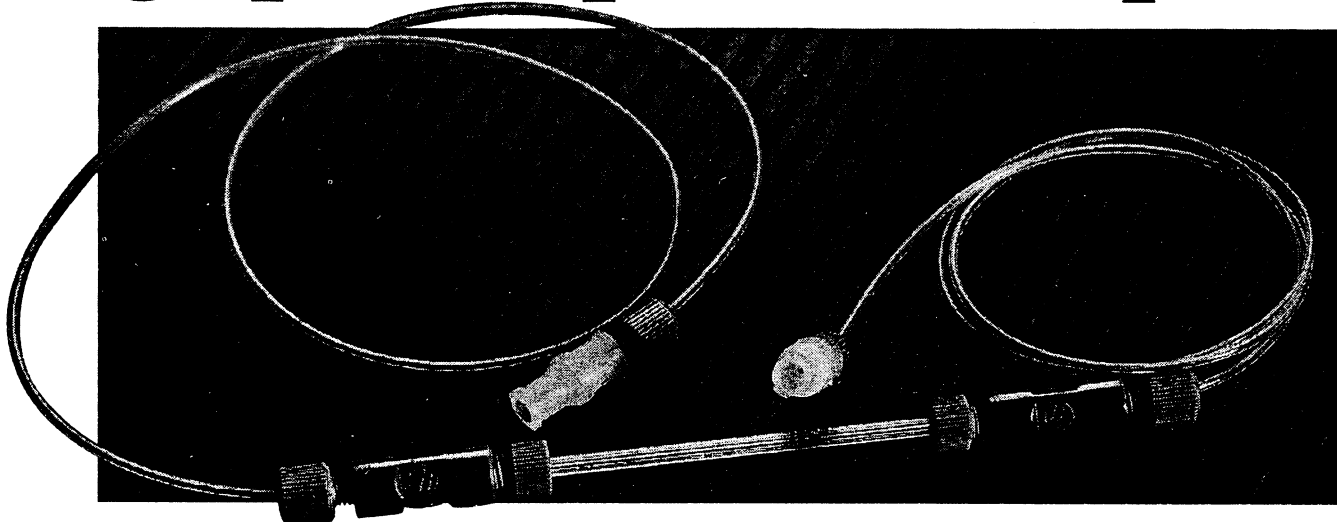
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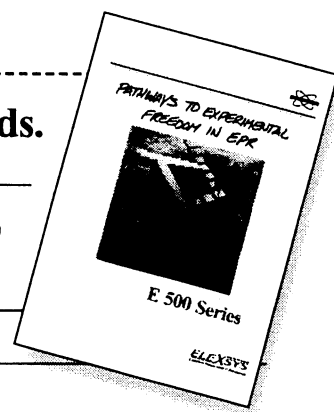
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Dr. Zbigniew Sojka, Jagiellonian University, Poland. "Paramagnetic molecules at catalytic surfaces".

Further details on this conference will be posted onto our Web page [<http://www.cf.ac.uk/esr/norwich/Bristol1.html>] as soon as they become available.

Joint Annual Meeting INTERNATIONAL SOCIETY for MAGNETIC RESONANCE in MEDICINE - ESMRMB, , April 21-27, 2001 Glasgow, Scotland

On behalf of the Scientific Program Committee, I would like to invite you to the Joint Annual Meeting ISMRM-ESMRMB, which will be held in Glasgow, the heart of Scotland, April 21-27, 2001. After a long six years, the annual meeting of the ISMRM is returning to Europe, where it will be organized in conjunction with the ESMRMB. Building upon the very successful architecture of past meetings, the Glasgow program will be designed to fulfill the needs and aspirations of MR- scientists and clinicians alike. Devoted to the development and clinical application of magnetic resonance technology in medicine, the Scientific Program Committee will incorporate all aspects of MR research and at the same time provide the broadest and most in depth educational effort ever. Introductory as well as advanced level clinical and methodological courses will be offered over the weekend as well as during the week parallel to the scientific sessions.

Up to 50 hours of CME credit will be offered for attendance of the educational track and/or the meeting.

The Joint Annual Meeting ISMRM-ESMRMB in Glasgow will provide a forum for scientific interchange among our colleagues working on methodological developments as well as applications of MR. Aiming at the highest level of understanding and innovation, the program will be designed to maximize participation of experts from fields related to magnetic resonance in medicine. Plenary lectures will reflect the multi-disciplinary character of MR in medicine. By comparing MR imaging technology to competing modalities, including ultrasound, CT, nuclear medicine, and optical imaging, the diagnostic potential of MR in the 21st century will reexplored. New contrast agents, the availability of specialized MR systems, as well as functional and multinuclear MR techniques will be highlighted. The societal dimension of MR in medicine will be explored by focusing on means to broaden MRI access and accommodate the needs of an aging population.

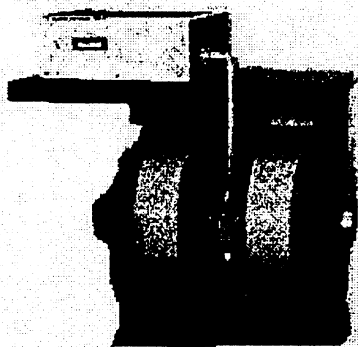
Attendees will be exposed to the highest level of MR - science and education - in the very special atmosphere of Scotland. The local organizing committee, headed by Donald Hadley, has worked very hard to assure that this meeting will be remembered not only for great plenary lectures, innovation presentations, and interesting posters, but also for Scottish culture, sites, and companionship.

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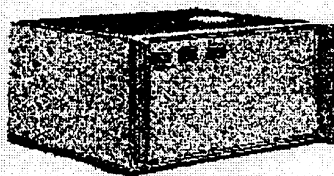
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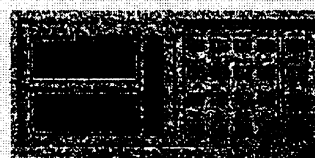
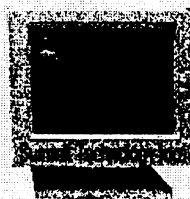
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The SPC invites you to join us at the Joint Annual Meeting ISMRM-ESMRMB. We look forward to your presence and contributions.

Jörg F. Debatin, M.D.

Chairman, Scientific Program Committee

We are looking forward to welcoming you all to Glasgow, Scotland, for the first joint ISMRM and ESMRMB meeting to take place in the UK. The meeting will be held in the Scottish Exhibition and Conference Center (SECC) in the heart of Glasgow on the banks of the River Clyde. The SECC offers a combination of advanced technical facilities and friendly efficient service in an excellent location, only eleven miles from the City's international airport and a ten-minute walk from the City centre. It has its own railway station and bus terminus linking it to Glasgow's excellent public transport system. Fast road access via motorways link it to the rest of the UK and Europe with ample parking available at the Centre. Accommodation ranges from University halls of residence to five star hotels, all within easy reach of the SECC and with two hotels on site. Eating out is a lively and cosmopolitan experience with cafe bars and restaurants to suit every palate serving everything from pub food to haute cuisine.

Glasgow is the largest city and business capital of Scotland (pop.765K). It is an international gateway renowned for the range and quality of its fine art museums and galleries, for the warmth and humour of its people. It is a city teeming with heritage and culture with a splendid pot pourri of arts and entertainment to suit all tastes. It prospered on trade with North America and most famously on shipbuilding, becoming the second city of the British Empire in the 19th century. After the demise of much of the heavy engineering, a massive regeneration has taken place over the last fifteen years with "high tech" silicon based industries, pharmaceutical, banking, insurance, and the service sector now providing the main employment. Today this rich cultural and industrial heritage is displayed in more than 20 museums and galleries, most of which are free to visit, while in 1999 it was chosen as UK City of Architecture and Design.

Glasgow and its Universities have contributed hugely to the basic science on which MRI and MRS developed. Three of the key names are those of Watt and Kelvin, both Glaswegians, and Maxwell, who came from the South of Scotland. These eminent pioneers who made it all possible have been recognised by naming the units or mathematical relationships we all use after them. Follow in the footsteps of these giants and come to the SECC, Glasgow, to share the most recent advances in our discipline or to attend a comprehensive teaching programme in April 2001.

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Local Organising Committee

Donald M. Hadley, M.B., Ch.B., Ph.D., Chair,
David N. Firmin, Ph.D.,
Margaret A. Foster, Ph.D.,
Roy E. Gordon, Ph.D.,
John R. Griffiths, M.B., B.S., D.Phil.,
David J. Lomas, M.D.,
Roger J. Ordidge, Ph.D.,
Derek Shaw, Ph.D.,
Joanna M. Wardlaw, M.D.,
Ian R. Young, Ph.D.

The Scientific Program Committee invites submission of abstracts to be presented in oral and poster sessions at the Joint Annual Meeting ISMRM-ESMRMB. Abstracts must contain new, previously unpublished material. The deadline for receipt of Abstracts in the ISMRM Office is **14 November 2000**. Abstracts accepted for presentation will be printed in the Proceedings for the meeting. Detailed instructions for submission will be posted on both the ISMRM and ESMRMB websites. You may also receive submission information by calling, faxing, or writing to:

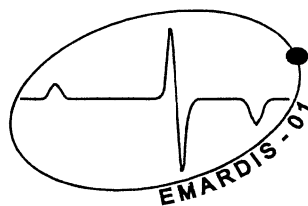
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**7TH INTERNATIONAL WORKSHOP ON ELECTRON
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Scientific Program:

EMARDIS The EMARDIS workshop aims to cover all qualitative (structural-reactivity, kinetics, etc.) aspects of recent development in theory, experiment, methodology, instrumentation, etc. of EMR (EPR, ENDOR and ESE) spectroscopy of disordered systems through lectures given by the top specialists, selected applicants and round-table discussions.

APPLIED EPR: The planned discussion topics are: Fundamental aspects of quantitative EPR (standards, calibration, metrology and methodology of quantitative measurements, instrumentation - new methods, advanced techniques, automatization, etc.); EPR dosimetry (high energy radiation monitoring, high energy radiation processing control in food preservation and sterilization, archeological and geological sample dating, etc.); EPR in biology and medicine (clinical and biomedical studies); EPR in environmental control; EPR in petrol industry; EPR and fossil fuels; EPR in polymer chemistry, etc.

Social program: Welcome party, half-day sightseeing tour in Sofia and farewell dinner are traditionally planned. An excursion to some places of regional historical and cultural interest will also be offered.

Tentative frame program Overall, the meetings will commence with dinner on Saturday (June 9) and will finish Monday (June 18) after breakfast. During June 9 - 14, EMARDIS problems will be discussed; then, June 15 - 18 will be devoted to the APPL-EPR Seminar. Thursday (June 14) will be leaving/arrival day for those who wish to attend only one of the events or free (excursion) day for those who will attend both events.

Language: The official language of the Workshop is English; all presentations and publications will be in English.

Further information: The first EMARDIS/APPL-EPR meetings circular with more details, will be distributed in the middle of September, 2000.

Addresses for correspondence: N. D. Yordanov (Convenor) or V. Gancheva (Sci. Secretary), Institute of Catalysis, Bulgarian Academy of Sciences, 1113 Sofia, Bulgaria. **E-mail:** emardis@ic.bas.bg; tel: (+359) 2 - 979-2546 or 979-2549 or 724- 917 fax: (+359) 2 - 756-116.

**VIIth INTERNATIONAL SYMPOSIUM on
MAGNETIC FIELD and SPIN EFFECTS in
CHEMISTRY and RELATED PHENOMENA, July
15-20, 2001, Tokyo, Japan.**

This is the 10th anniversary of the conference, which began in 1991 in Tomakomai (Japan) and continued in 1992 in Konstanz (Germany), 1994 in Chicago (USA), 1996 in Novosibirsk (Russia), 1997 in Jerusalem (Israel), and 1999 in Emmetten (Switzerland). This meeting is similar to its predecessors and will focus on various subjects concerned with the influence of magnetic fields on chemical and biochemical reactions. Topics to be covered will be: Magnetic field dependent processes in the gas, liquid, and solid phases, in restricted environments (e.g. micelles), in radiolysis reactions, in enzymatic reactions, in photosynthesis and biomimetic models. Effects at high and low magnetic fields. Applications of, and novel developments in CIDNP, CIDEP, MARY, RYDMR, and high-frequency induced CIDEP spectroscopies. Nuclear spin labeling and orth-para conversion. New experimental developments and techniques.

Scientific Program – The scientific program will consist of invited lectures and contributed talks as well as three poster sessions. A special session celebrating the 80th birthday of Prof. Nagakura is intended. Here, the present trends of magnetic field effects in the gas phase will be viewed.

Location and Accommodation – All conference activities will take place from 18:00 of July 15 to 14:00 of July 20 at the hotel "Komaba Eminence," a conference hotel located in the center of Tokyo (Ohashi 2-19-5, Meguro, Tokyo 153-0044).

Registration – In order to receive further information regarding the symposium, please return the preliminary registration form promptly to the organizer via E-mail, FAX, or mail. The first circular including the details of this meeting and its preliminary registration form can be requested via E-mail. The second circular will be published about December 15 of 2000.

Address for Correspondence – Dr. Hisaharu Hayashi, Organizer, Molecular Photochemistry Laboratory, RIKEN (The Institute of Physical and Chemical Research), Wako, Saitama 351-0198, JAPAN; ☎: 81-48-467-9394, 9395, Fax: 81-48-462-4664., E-mail: spinchem@postman.riken.go.jp Details on web site: <http://spinchem.riken.go.jp>.

INTERNATIONAL SOCIETY of MAGNETIC RESONANCE (ISMAR), Jerusalem, Israel, August 19-24, 2001.

The next meeting of the International Society of Magnetic Resonance (ISMAR) will take place in Jerusalem, Israel. The conference will mark the 30th anniversary of the foundation of the ISMAR and its first meeting, which took place in Israel in 1971. In the tradition of the ISMAR conferences, the meeting will provide a forum for physicists, chemists and biologists interested in NMR and ESR spectroscopy and imaging, and their applications to natural sciences and medicine.

*Gil Navon, Chair,
Zeev Luz, and Daniella Goldfarb, Co-Chairs.*

Information about the meeting is now available on the internet, at:

<http://www.tau.ac.il/chemistry/ISMAR.html>

WORKSHOP on EPR STUDIES of VIABLE BIOLOGICAL SYSTEMS, (especially *in vivo*) and RELATED TECHNIQUES (especially oximetry), September 8-13, 2001, Dartmouth Medical School, Hanover, New Hampshire

The EPR Center for the Study of Viable Biological Systems at Dartmouth Medical School, Hanover, NH, USA (Hal Swartz, PI) is pleased to announce the scheduling of the approximately 9th meeting in the series on *In Vivo* EPR and related studies. Previous meetings include: • University of Illinois (1986); • L'Aquila #1 (1989); • Dartmouth #1 (1993); • Yamagata #1 (1994); • L'Aquila #2 (1995); • Yamagata #2 (1997); • Dartmouth #2 (1998); • Aberdeen (1999). This meeting will take place on September 8-13, 2001 and will be carried out as part of the activities of the EPR Center for Viable Systems at Dartmouth, a NIH supported resource center.

The aim is to bring together all active researchers in this field to present the latest results and concepts in the field. The meeting will include coverage of the following general topics:

- Instrumental Approaches (*In Vivo* Spectroscopy, *In Vivo* Imaging, Overhauser Imaging, Pulse Methods, Resonators);
- *In Vivo* Oximetry; • Development of Paramagnetic Materials for *In Vivo* Uses; • *In Vivo* Measurements of Nitric Oxide;
- Use of *In Vivo* EPR for Pharmacology; • *In Vivo* Measurements of Reactive Species; • EPR Studies of Viable Cell Systems.

As in the previous meeting held at Dartmouth in 1998, the program will emphasize opportunities for scholarly and personal interactions, similar to the atmosphere of a Gordon

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Conference. The program will consist of oral and poster presentations, with an emphasis on discussions.

The anticipated logistical/financial arrangements are to have a single registration fee which will cover all meals and the hotel for the period of the evening of Saturday, September 8 through dinner on Thursday, September 13. Departure will be on Friday morning, September 14. Financial assistance will be available for some young investigators. At this time it is estimated the total cost per person, including registration, rooms, and meals, to be about \$600 for those who stay at the Hanover Inn and share a room. If you are interested in attending, please fill out the response form on our web site:

www.dartmouth.edu/~eprctr/workshop2001

3RD INTERNATIONAL CONFERENCE on NITROXIDE RADICALS "SPIN: SYNTHESIS, PROPERTIES and IMPLICATIONS of NITROXIDES," University of Kaiserslautern, Germany, September 24-26, 2001.

After two successful meetings in Pécs 1979 and Novosibirsk 1989 we are proud to host the 3rd International Conference on Nitroxide Radicals, September 24-28, 2001 in Kaiserslautern, Germany.

Kaiserslautern is located about 70 miles southwest of Frankfurt and 300 miles east of Paris. Trains Frankfurt-Paris have a stop in Kaiserslautern. The city is also connected by the Autobahn (Frankfurt)-Mannheim-Kaiserslautern-Saarbrücken-Paris as well as Mainz-Kaiserslautern. Trains run directly from Frankfurt Rhein-Main International Airport to Mannheim about every 30 minutes with immediate connections to Kaiserslautern. Duration: 40 min. to Mannheim and another 40-60 min from Mannheim to Kaiserslautern. The city and university are located at the western rim of the Pfälzer Wald, the largest contiguous forest area in former West Germany. The town was founded in the 12th century by emperor Barbarossa (Red Beard) and has roughly 100,000 inhabitants. The university is a Technical University, founded in 1970 with somewhat above 8000 students. Congress venue will be at the

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university which can be reached from downtown or the railway station by frequent busses within 10 to 15 min. Bruker's ESR Division has agreed to host the participants for half a day showing their superconducting magnet production as well as their EPR facilities near Karlsruhe, located about 90 km East of Kaiserslautern.

The members of the International Organizing Committee (Lawrence Berliner, Marcus Hemminga, Kálmán Hideg, Alexander Kokorin, Hirotada Fujii, André Rassat, Heinz-Jürgen Steinhoff, Harold Swartz & Wolfgang Trommer) will do their very best to provide an interesting program that will include the following topics:

- Nitroxides: synthesis, chemistry and biochemistry, application in chemistry, biochemistry, biomedicine and polymer sciences theory and simulation;
- Nitrones: chemistry and application;
- Nitric oxide: physiological role and application;
- New types of stable radicals and other recent developments;
- Special event: Excursion to Bruker Analytik GmbH, ESR Division.

For further information on this meeting, contact Prof. Dr. Wolfgang E. Trommer, Fachbereich Chemie, Universität Kaiserslautern, Postfach 3049, D-67653 Kaiserslautern, Germany; ☎: 49-631-205-2045; Fax: 49-631-205-3419; e-mail: trommer@chemie.uni-kl.de or visit the web page:

<http://iris1.chemie.uni-kl.de/spin2001.html>

THIRD ASIA-PACIFIC EPR/ESR SYMPOSIUM (APES'01), Kobe University, Kobe, Japan, 31 October to 4 November, 2001.

Prof. Asako Kawamori, Chairperson of LOC, Faculty of Science, Kwansei Gakuin University, Uegahara 1-1-155, Nishinomiya, 662-8501, Japan. Tel.: 81-798-54-6383/Fax: 81-798-51-0914.

E-mail: kawamori@kwansei.ac.jp

Web <http://www.ied.edu.hk/has/phys/apepr/index.htm>

NOTE: the local Website for APES'01 will be announced later in 2000. For more information about APES please visit the WWW home-page at:

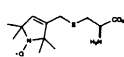
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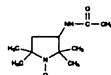
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POST-DOCTORAL POSITION AVAILABLE at the TOKYO INSTITUTE of TECHNOLOGY

The Tokyo Institute of Technology is seeking applications from appropriate candidates for a JSPS (Japan Society of Promotion of Sciences) Post Doc. The requirements for this position are: a Ph.D. earned after April 1993 and US citizenship (or green card). He or she is requested to come to Japan by the end of March, 2000. The contract will be one + one year, for two years max. (minimum 3 months, maximum 2 years). Monthly salary is 270 (+ 50 for accompanying family) kyen, about US\$2,550 (+ US\$480). In addition, 200 kyen will be paid at the time of arrival and up to 100 kyen (US\$940) for housing each month. Also provided each year are a research grant of up to 1.5 myen, insurance fee, and 58 kyen travel expenses in Japan. A candidate with experience in EPR of solids is highly preferred. Interested candidates please apply as soon as possible to Hideo Hosono, Project Leader of HOSONO Transparent ElectroActive Materials Team, Exploratory Research for Advanced Technology (ERATO), Japan Science and Technology Corporation and Professor of Materials and Structures Laboratory, Tokyo Institute of Technology, Nagatsuta, Midori-ku, Yokohama 226-8503, JAPAN; ☎: 81-45-924-5359; Fax: 81-45-924-5339 or 5359; E-mail: hosono1@rlem.titech.ac.jp. For further information about the Hosono Lab, visit:

<http://lucid.rlem.titech.ac.jp/~www/>

for the graduate school, visit:

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TWO GRADUATE STUDENT POSITIONS AVAILABLE at LEIDEN UNIVERSITY

The Department of Biophysics of Leiden University, The Netherlands, has two graduate student (PhD) positions open for (bio)physicists or physical chemists who are interested in applying various magnetic resonance techniques for unraveling the fundamental molecular mechanisms of solar energy conversion in plant photosynthesis.

The Magnetic Resonance Group of the department has a longstanding tradition of applying sophisticated electron paramagnetic resonance methods to obtain information on the structure and function of the photosynthetic apparatus that cannot be obtained by other methods. The techniques comprise state-of-the-art time-resolved flash photolysis EPR equipment at a number of microwave frequencies ranging from 2 to 130 GHz, pulsed EPR, including 1D and 2D Electron Spin Echo Envelope Modulation (ESEEM) and pulsed Electron-Nuclear Double Resonance (ENDOR) spectroscopy, optically detected magnetic resonance (ODMR), and magnetophotoselection experiments, all at variable temperatures down to 1.2 kelvin. Several of the



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The second project involves the development and implementation of a new ODMR spectroscopy, in which changes in the circular dichroism of the photosynthetic preparation are measured and correlated with the detailed structure of the cofactors and their protein environment.

The two projects represent two different approaches aiming at understanding the mechanisms of photosynthetic energy conversion in sufficient detail to make it possible to develop environment-friendly biomimetic solar energy cells that harvest sunlight and convert it into sustainable chemical and electrical energy. The projects are embedded in a TMR Network of the European Union, comprising groups in Athens, Berlin, London, Munich, Oxford, Padova and Paris, which coordinates the investigations aimed at developing a source of sustainable energy.

The positions offered are each for a four-year term, and can be occupied as of now. Gross salary will start at 2374 Dutch Guilders/month plus DG 700/month special allowance, with yearly increases to DG 4037/month in the fourth year. Candidates should preferably have some experience with EPR or related spectroscopies. Experience in photosynthesis research is appreciated but not necessary. They should submit a full resume, including a list of papers and practical works, and name and addresses (with phone, fax and email) of at least two referents.

Further information about the Magnetic Resonance Group can be found at the website of the Biophysics Department, with a description of current research and a list of recent papers:

<http://www.biophys.leidenuniv.nl/research/RCs/>

(continued to page 20)

For more information on the two projects contact Prof. Dr. A.J. Hoff, phone +31-71-5275955, fax +31-71-5275819, email hoff@biophys.leidenuniv.nl or Dr. P. Gast, phone +31-71-5275979, email gast@biophys.leidenuniv.nl. Applications should be sent to Prof. Dr. A.J. Hoff, Biophysics Department, Huygens Laboratory, Leiden University, P.O. Box 9504, 2300 RA Leiden, The Netherlands.

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FOR SALE: SPECTRANOVA TEST EQUIPMENT

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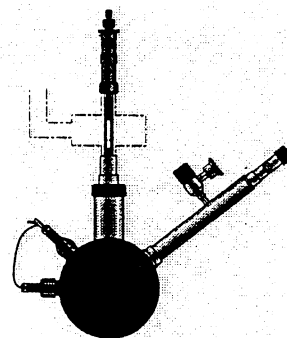
- 2,6-bis(N-oxylo-tetramethyltetrahydropyrid-4-yl)thyophene
- 5-(N-oxylo-tetramethyltetrahydropyrid-4-yl)thyophene-2-al
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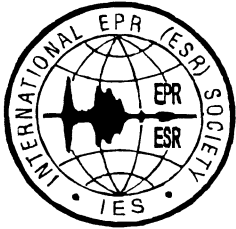
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All these Centers are sponsored by the National Institutes of Health. They cooperate to facilitate research involving EPR and related techniques. Prospective users may contact the staff at any of the Centers.

Please direct your communications about the EPR Newsletter or prospective material for publication to Becky Gallivan in the Editorial Office at the IERC (address, phone, FAX above; e-mail: ierc@uiuc.edu.)

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EPR NEWSLETTER

Volume 11, Number 3

Page 1

2000

From the Editor— Members of the Society, we need your help. We are considering publishing the Newsletter electronically, perhaps by posting issues as Acrobat PDF files on a secure Web server, accessible by each paid member with his or her individual password. It has the disadvantage of making some extra work for the editorial office, but many advantages. It would allow instant posting, eliminating the long distribution delays, sometimes as much as a month or two, caused by the printers and shipping. It would greatly reduce the printing costs, as only a small number of paper copies would have to be produced, and it would allow some full-color material. Paid-up IES members would get e-mail notices whenever a new Newsletter or auxiliary material is posted. What do you members think of this idea?

We need current e-mail addresses for you! Please find your e-mail address on our web site (<http://ierc.scs.uiuc.edu/email.html>) and inform us promptly if it is not currently correct. Thanks.

R. Linn Belford, Urbana

Letter from the President— Outstanding dues payments. Yet again I must remind all members to ensure that they are financially current. Becky Gallivan in the IES Office will check our records and send email reminders to those who have not paid in 1999 and/or 2000. It is possible for most of us in the West to pay by credit card if we so wish or through a Regional Treasurer at the currency levels published in the EPR Newsletter. The General Meeting in Denver last August passed a motion (found in the Report of the Meeting elsewhere in this issue) urging the Executive to take firm action. To get our finances on track, we need all members to pay the modest dues each year. The Society is the only international society devoted to EPR and it provides a very significant network of EPR researchers throughout the world. The final EPR Newsletter for the year will again be the directory of EPR researchers, not all of whom are in fact members of the society, about 4000 in all. I find that compendium useful usually several times each week when I am looking for email addresses of colleagues from around the world. ***If you are among the non-payers, please pay up now before it proves necessary to send you another reminder!***

John Pilbrow

(President's Letter continued on page 22).

• Newsletter Editor: R. Linn Belford, Urbana, IL
• Assistant Editor: Becky Gallivan, Urbana, IL
• This, the official newsletter of the **International EPR(ESR) Society**, is supported by the Society, by corporate and other donors, and by the National Center for Research Resources in the U.S. National Institutes of Health. For additional information including how to contact the editor, see page 24.

FELLOWS OF THE INTERNATIONAL EPR(ESR) SOCIETY TO 1999

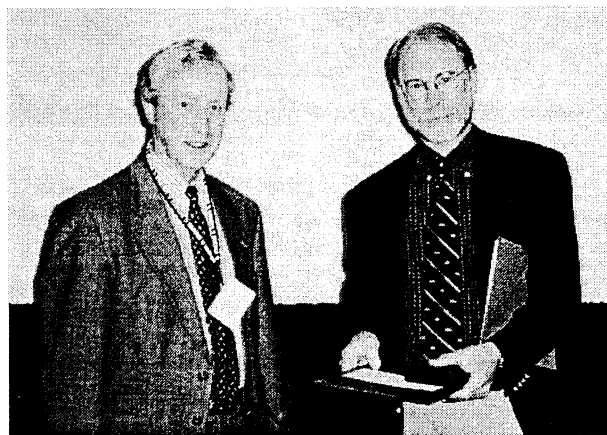
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(NEW IES FELLOWS FOR 2000 NAMED IN THIS ISSUE.)

IES AWARD WINNERS for 2000

YEAR 2000 Gold Medal To Professor Wayne

L. Hubbell, UCLA. Professor Wayne Hubbell of UCLA is awarded this year's Gold Medal of the International EPR (ESR) Society in recognition of his seminal contributions in the use of nitroxide radical spin labels and spin probes to investigate membrane dynamics, membrane potentials and structures of membrane proteins. His expertise in physical chemistry, electron paramagnetic resonance spectroscopy, membrane biophysics, and structural biology has led him to



Presentation of the IES Gold Medal to Prof. Wayne Hubbell by the IES President, John Pilbrow, during the 23rd International EPR Symposium, Denver, 31 July 2000.

develop novel methodologies using spin labels. He has repeatedly used these innovative methods to investigate the visual pigment rhodopsin, contributing significantly to the physiology of vision. Dr. Hubbell's pioneering work in site-directed spin labeling (SDSL) is specifically recognized, since it permits acquisition of dynamic protein structural information that seems impossible to acquire using other methods. He has

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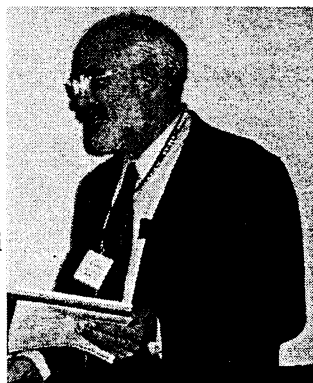
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significantly advanced the field of EPR through mentoring of graduate students and postdoctoral fellows. He has always been an enthusiastic spokesman for EPR, to the benefit of all in the field.

Silver Medal for Biology/Medicine to Prof. Lawrence J. Berliner, Ohio State University

This Award is presented for major contributions to a wide

Prof. Larry Berliner during the formal presentation of his Silver Medal for Biology/Medicine by the IES President, John Pilbrow, during the 23rd International EPR Symposium, Denver, 31 July 2000.



spectrum of research in spin labeling in biochemistry and for the development and applications of *in vivo* EPR. Also for his leadership in disseminating the results and techniques of EPR in biological systems through the two series, 'Spin Labeling' and 'Biological Magnetic Resonance'. His conception, development and testing of the thiol specific spin label; methylmethane thiolsulfonate (MTSL), made possible the development of site directed spin labeling by Wayne Hubbell. He carried out the first L-band *in vivo* EPR imaging on living plants and animals, work that continues with particular emphasis on the study of free radical intermediates of drugs. With Dr. Hirotada Fujii he has studied nitric oxide *in vivo* using EPR. He has successfully applied NMR spectroscopy and imaging to study free radicals, including the use of spin traps *in vivo*. A Charter Board Member of the Society, he served for many years as Chair of the Awards Committee. He

received his introduction to EPR and spin labeling with Harden McConnell at Stanford. On the Chemistry Faculty at Ohio State University since 1969, Larry Berliner is about to become Chair of Chemistry at the University of Denver.

Silver Medal for Chemistry to Prof. Larry Kevan, University of Houston, Houston, Texas.

Professor Larry Kevan transformed ESEEM spectroscopy from an obscure phenomenon of interest to a handful of EPR spectroscopists into a commonly used technique

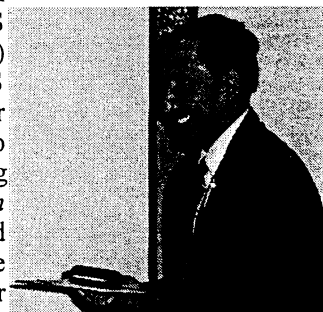
that is widely applied and essential to solving current problems in chemistry. Straightforward methods of data interpretation routinely provide structural information unavailable by other methods in the fields of micro- and mesoporous materials, catalysis, and ordered fluids. Professor Kevan had the vision, imagination and the courage to use novel, sophisticated pulsed EPR to study "real" systems where signals are weak, relaxation times short, structures complicated and often not well defined. Yet, he has systematically demonstrated that, correctly applied, a wealth of new information can be obtained. Many of his former associates excel today in various fields and continue to improve the tools that Larry developed and to apply them to important problems in chemistry, materials science, biology, self-assembly, imaging and polymers. Larry Kevan has authored or co-authored more than 700 scientific articles and five books.

Silver Medal for Physics/Materials Science to Klaus-Peter Dinse, University of Darmstadt

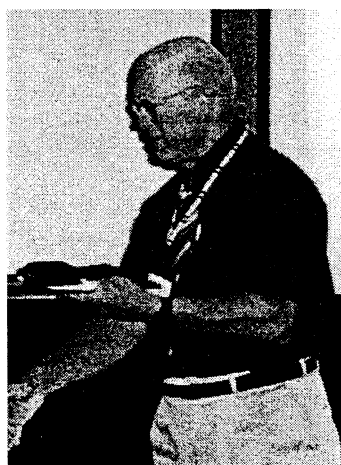
Professor Peter Dinse has pioneered EPR investigation of atoms and ions encapsulated in Fullerenes showing that for the abundant species, LaC₈₂, significant charge transfer to the cage establishes a rather strong ionic bond, localising the positive ion at specific sites on the inner surface. This has provided insight into the mobility of the encased ion and also of the Endofullerene in condensed phases. High resolution spectroscopy of the highest order was achieved for atoms that have negligible interactions with the confining cage, such as nitrogen in C₆₀, showing exceptional spin dynamics and vanishing charge transfer. Thus highly reactive atoms like nitrogen and phosphorus, which otherwise can only be trapped and studied at low temperatures in noble gas matrices, can now be contained by the nearly unstructured and homogeneous inner surface of the Fullerene cage. Peter Dinse has taken the EPR of isolated atoms and small molecules to a new level, as these investigations can now be performed at room temperature. He has also developed 2D EPR methods to analyse the interconversion between different short-lived radicals in photo-induced electron spin polarisation in electron/proton transfer reactions in solution.

Inaugural Silver Medal for Instrumentation to Professor Sankharan Subramanian, NCI

Professor Sankharan Subramanian of the US National Cancer Institute (NCI) has been awarded the first IES Silver Medal for Instrumentation for bringing to fruition pulsed FT-EPR imaging of Nycomed free radicals *in vivo*, experiments judged originally by many not to be possible. Professor Subramanian led the development during sabbatical visits, directing some former students then working at NCI. The method allows imaging of the injected stable radical 'dye'



Prof. Sankharan Subramanian accepts the Inaugural Silver Medal for Instrumentation during the 23rd International EPR Symposium in Denver, 31 July 2000.



Prof. Larry Kevan during presentation of his Silver Medal for Chemistry at the 23rd International EPR Symposium, Denver, 2nd August 2000.

as well as images of oxygenation levels in tissues due to the time resolution of the decay. This ability is leading to a new understanding of drug effects that were not even contemplated before experiments with the imager revealed their presence. A graduate of the Universities of Kerala (MSc) and Leicester, where he gained his PhD under IES Fellow, Professor Martyn Symons, Professor Subramanian then spent 26 years at the Indian Institute of Technology, Madras, finally as Director of the Regional Sophisticated Instrumentation Centre from 1989 until 1997. Taking voluntary early retirement in 1997 he moved permanently to the USA to work at the NCI. He is a Fellow of both the Indian Academy of Sciences and the Indian National Science Academy.

Young Investigator Award to Bernard Gallez, joint winner with Karsten Mäder in 2000

Bernard Gallez earned his PhD (Pharmaceutical Sciences) in 1993 at the University of Louvain (Brussels) with "*la plus grande distinction avec les félicitations du jury*". He then spent an extremely productive post-doctoral year at Dartmouth. He is the author or co-author of more than 45 publications, principally in high impact journals. He has already received the following awards: - Prize of the Belgian Society of Pharmaceutical Sciences 1995 [Biennial Prize] and Prize of the Alumni 1998, Belgian University Foundation for the Category: Medicine, Pharmaceutical Sciences, Veterinary Sciences [Five-year Prize]). He has been a prime force in extending EPR techniques to the study of Pharmacological problems. His academic success and organisational abilities have been recognised by his early appointment to a faculty position in 1995, promotion to Associate Professor in 1996, and appointment as Director of the Laboratory of Biomedical Magnetic Resonance, Department of Radiology and Medical Imaging, University of Louvain. He also has competed successfully for funding from NIH, an unusual accomplishment for someone located outside the USA. It is fitting that he shares the Young Investigator Award for 2000 with his collaborator Karsten Mäder.

Karsten Mäder, joint winner with Bernard Gallez of Young Investigator Award for Year 2000

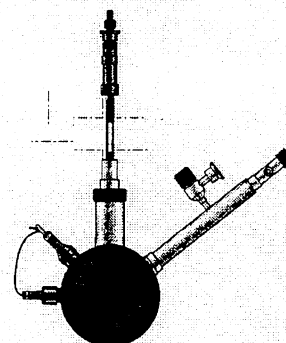
Karsten Mäder earned his Ph.D. (*Summa Cum Laude*) on "Application of ESR and ESR Imaging in Biopharmacy" in 1993 at the Department of Pharmacy, Humboldt-University Berlin, Germany following which he had an extremely productive post-doctoral fellowship at Dartmouth. He returned to Germany in 1995 with a prestigious Habilitation Fellowship and received his habilitation degree in 1998. In 1997 he was appointed as a senior scientist in the group of Prof. T. Kissel, Philipps-University Marburg. In 1998 he was appointed Senior scientist in the group of Prof. R.H. Müller, Free University Berlin. His awards include the Scheele award of the German Pharmaceutical Association in 1995 and the Capsugel award from the Controlled Release Society in 1997. He has published more than 45 papers in leading journals and chapters in three books. He, along with Bernard Gallez, is widely recognized as demonstrating the high productivity of EPR approaches in Pharmacology. It is therefore fitting that he shares the award in 2000 with Gallez. He continues to collaborate actively with the group at Dartmouth and the study section enthusiastically supported his inclusion as a paid

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consultant for the EPR Center. He has recently joined the staff of F. Hoffman-La Roche, in Basel, Switzerland.

Professor Noburo Hirota, 2000 IES Fellow

Prof. Noburo Hirota from Kyoto University has been honoured with Fellowship of the Society for pioneering and highly original contributions to ESR over more than three decades. During his graduate studies at Washington University, St Louis, under Professor Sam Weissman, Professor Hirota began to study ion-pairing phenomena in solution by using ESR spectroscopy to resolve interesting clusters of anion radicals and alkali metal ions. This was followed by investigations of the excited triplet states of

aromatic hydrocarbons using ESR whilst working as a postdoctoral fellow at the University of Chicago. He has also undertaken time-resolved EPR studies on non-phosphorescent



Prof. Noboru Hirota speaks at 23rd Int'l EPR Symposium Dinner, Denver, 1st August 2000, after presentation of his IES Fellowship.

triplet molecules and CIDEP studies in collaboration with many young scientists in Japan including Professors Yamauchi of Tohoku University and Shinohara at Nagoya University. Professor Hirota is truly one of the fathers of high-resolution ESR in Japan. Many of his students have significant positions in Japanese Universities demonstrating that he established an ESR school of the highest caliber in Japan. He has recently retired

and has been honoured with a Festschrift meeting in Japan.

Prof. Anders Ehrenberg, University of Stockholm, IES Fellow for Year 2000

Professor Anders Ehrenberg has been honoured with Fellowship of the Society for being one of the international pioneers in the applications of EPR to biological systems. His



Presentation of IES Fellow Citation to Prof. Anders Ehrenberg by Prof. Sandra Eaton at XIXth ICMRBS, Florence, Italy, August 2000.

early work on flavoproteins and flavins in the 1950's and 1960's established a firm foundation for the understanding of these enzymes and their cofactors. At this time he also applied EPR to problems concerning radiation-induced free

radicals in DNA and other biomolecules. His subsequent EPR work during the 1970's on ribonucleotide reductase, an enzyme active in DNA precursor metabolism, led to the discovery of the stable free radical on a tyrosyl residue which is needed for catalytic activity. This discovery of the first stable and functionally important free radical in an enzyme, together with further functional studies on ribonucleotide reductase, founded the field of 'Free Radical Enzymes'.

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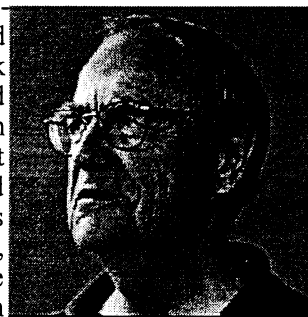
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Prof. August H. Maki, IES Fellow for Year 2000

Professor August (Gus) Maki has been elected to Fellowship of the International EPR (ESR) Society for many very important contributions to the field of EPR spectroscopy, starting with graduate work under Bruce McGarvey at the University of California, Berkeley (1952-57). The famous 1958 Maki- McGarvey papers on EPR of Cu(II) bis-

acetylacetonate and Cu(II) bis-salicylaldehyde-imine provided a molecular orbital framework to analyse EPR-detected hyperfine couplings which revealed details of covalent bonding in metal-ligand complexes. Gus and his impressive array of students, postdocs and colleagues have introduced many advances in applications of EPR



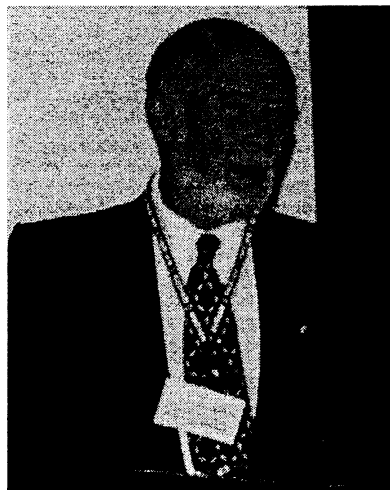
spectroscopy to chemical and biochemical systems, for example, *in situ* generation of free radicals, pioneering use of ENDOR for organic radicals in solution, EPR analysis of Ni(III) square planar complexes, EPR and ODMR spectroscopy of excited state organic triplets, high pressure effects on EPR spectra of radicals in solution, and optically detected ENDOR. He used ODMR of photoexcited triplet states of nucleic acid bases and aromatic protein sidechains using the zero field splittings of photoexcited tryptophan sidechains as a probe of protein/nucleic acid interactions. Gus Maki is currently Professor of Chemistry Emeritus at the University of California, Davis Campus. It is noteworthy that his PhD advisor at Berkeley, Professor Bruce McGarvey, now of the University of Windsor in Canada, has also been elected to Fellowship of the Society this year.

IES Fellow - Prof. August (Gus) Maki, University of California at Davis.

Professor Bruce R. McGarvey, Year 2000 IES Fellow

Professor Bruce McGarvey is honoured with Fellowship of the Society for numerous in-depth contributions in research and teaching, in both EPR and NMR, in a lengthy and on-going career focussed on magnetic resonance spectroscopy. Starting with NMR studies under the late H.S. Gutowsky at the University of Illinois, Dr. McGarvey has made seminal contributions to EPR including the discovery of the ¹⁴N and ¹H superhyperfine structure in Cu(II) complexes and studies of

spin cross-over phenomena in Fe(II) complexes. The famous 1958 Maki-McGarvey papers on EPR of Cu(II) bis-acetylacetonate and Cu(II) bis-salicylaldehyde-imine provided a molecular orbital framework to analyse EPR-detected hyperfine couplings, revealing details of covalent bonding in metal-ligand complexes. Recent papers include EPR studies of



Prof. Bruce McGarvey, speaking during dinner at 23rd International EPR Symposium, Denver, 1st August 2000, following the presentation of his IES Fellowship.

noteworthy that the Society is also electing to Fellowship this year his former student, Professor Gus Maki.

Prof Tengiz Sanadze, 2000 IES Fellow

Professor Tengiz Sanadze is honoured with Fellowship of the Society as being one of the pioneers of Pulsed EPR Spectroscopy. In the middle of the 1960's he discovered the phenomenon of Discrete Saturation and developed pulsed methods such as Discrete Saturation Spectroscopy (DS), often referred to as 'Hole Burning Spectroscopy', and a pulsed version of ENDOR – Radio Frequency Discrete Saturation (RFDS). DS and RFDS methods represent efficient pulsed methods for investigation of hyperfine interactions and are still important today. Professor Sanadze established the magnetic resonance experimental school in Georgia where he is the Head of the Radiophysics Department, Tbilisi State University, Georgia. Since 1973 he has been the Head of the Council to award scientific degrees in the field of physics at Tbilisi State University. In this citation we also acknowledge the contribution Professor Sanadze makes to the Society through the production of our medals.



Prof. Harden M. McConnell is Winner of The Zavoisky Award for Year 2000

Following extensive nominations from the international community of EPR scientists the International Zavoisky Award

di- and tri-radicals bonded to main-group metal ions. Dr. McGarvey has had appointments at Berkeley, Kalamazoo College, the Polytechnic Institute of Brooklyn and, since 1972, the University of Windsor in Canada. Throughout, his deep insight into the quantum chemical aspects of transition metal ion species has had considerable impact internationally. It is not out of place to mention his fine contributions to our understanding of paramagnetic shifts caused by inorganic complexes in NMR. It is

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Committee is delighted to announce that the Zavoisky Awardee 2000 is Professor Dr. Harden M. McConnell (Stanford). Prof. McConnell is distinguished for his work in electron paramagnetic resonance and, in particular, his outstanding contribution to the understanding of the relationship between hyperfine splittings and the electronic structures of radicals and to his development of spin labeling for biophysical studies. A further citation of his work will appear in a forthcoming issue of "Applied Magnetic Resonance".

A diploma is awarded to Bruker Analytik GmbH in recognition of the outstanding achievements of this company in developing multifrequency EPR instrumentation that leads to novel applications of electron paramagnetic resonance in physics, chemistry and biology.

The awards were made at the annual Workshop "Modern Development of Magnetic Resonance" held in Kazan 26-30 September 2000.

Professor Kev M. Salikhov
Chairman
Zavoisky Award Committee

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From the President—

International EPR (ESR) Society - President's Report

Presented to the IES General Meeting held during 23rd EPR International Symposium, Denver 1 Aug 2000. This was subsequently edited to remove unnecessary duplication of information contained in minutes of the meeting (see APPENDIX for Minutes).

THE SOCIETY IS >10 YEARS OLD THIS YEAR!

It is gratifying to look back on the ten+ year history of our Society, to realise that the motivation for establishing it in the first place, is as relevant today as it was then. We are in the debt of Founder President, Hal Swartz, and those who supported him ten years ago.

But after this time we do need to review the service we

provide to members. What members get for what is still a modest subscription is the quarterly EPR Newsletter and the annual extended mailing list of those associated with or involved in EPR.

The Society will need to look at ways of taking greater advantage of internet communication. We already use email for subscription reminders and voting for office bearers for those members with active email addresses.

THANKS. Thanks are due to Becky Gallivan who runs the Office in Urbana, to Linn Belford, as Editor of the EPR Newsletter ably backed up by Becky with regard to preparation and layout. We also put on record our thanks to Martha Moore, who resigned recently from the Office in Urbana, where she had worked half-time for the Society. Martha was mainly responsible for maintaining the database and the layout of the Newsletter.

We continue to be grateful to Bruker AG for covering the costs of Newsletter mailing around the world. We thank Professor Tengiz Sanadze in Tbilisi for another splendid set of medals. Members will recall that Tengiz made 32 medals last year covering all winners back to George Feher in 1992!

I would like to thank all of the members of Awards Committees for prompt deliberations. Finally, I would like to thank all Office Bearers for their willingness to serve their colleagues around the world through our Society.

NEW CONSTITUTION The New Constitution was adopted late last year and appears to be serving us well.

MAJOR PROBLEMS The major problem we face is the poor rate of payment of subscriptions or dues. There are some 1500 people who consider themselves members of whom at any one time, only about 35% are financially current. Until we can establish a reliable budgeted income, it will be impossible to restore scholarships for graduate students or to take any new initiatives beyond the Newsletter. Maybe the Newsletter is all that members want.

Then there is the cost of producing the excellent mailing list every year with about 4000 names. How can we get more of the additional people on that list to pay a subscription?

We need to keep in regular touch with Regional Treasurers on whom we rely to forward funds held on behalf of the Society and to provide the Office with updated membership records on a regular basis. With them we need to develop some simple operating guidelines to make everyone's job easier.

There is also a problem with regard to the Newsletter. We rely on contributions from members and it should not just rely on those who have taken major responsibility over the years. What about writing up some interesting ideas, recent experiments or fascinating history to share with your international colleagues in the Society? The Editor would be pleased to hear from you. It has

been difficult for the Editor to keep to the deadlines agreed without adequate copy for each issue.

THE EXECUTIVE.

Election of Office Bearers [1999 and two new Vice-Presidents 2000]. A disappointing number of votes were cast confirming the election of office bearers last year. Elections are decided on the majority of votes cast, there being no lower limit.

I am happy to report that as at 10th July there had been almost 200 votes cast in support of the nominations of both Sandy Eaton and Kev Salikhov, elected unopposed for the additional positions of Vice-President. They will hold office, along with the other Office Bearers, until 30 September 2002. Thus we have now have fairly wide geographic representation on the Executive. Under the new Constitution, Hiro Ohya is now Senior Vice-President until 30 September of this year. In an order yet to be decided, Kev and Sandy will take turns for a year each as Senior Vice-President. The reason for designating a Senior Vice-President [in turn] is simply to provide for a clear process in the event of death or resignation of a President.

Sharing of Responsibilities by Office Bearers

Now that we have the full team on board, work needs to be done to work out the best ways in which each of us can contribute to the Society. There are some Secretarial tasks I continued to do as the Secretary was in Japan for a time. These will be handed over to him in the near future. I will work with all three Vice-Presidents to see how they can best assist the Society by finding particular opportunities in their own regions – Asia, Europe and the Americas.

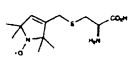
Timetable for action The Executive agreed on a timetable for key actions by individual executive members each year. This includes awards and production of the Newsletter. In particular we hope to move to the goal of having the issues of the Newsletter coming out each quarter. In 2001 it will include beginning the process of election of the next Executive to take office on 1 October 2002. There will be plenty of time allowed for more than one nomination for each position, except that of Editor of the Newsletter, as that is the prerogative of the President.

THE PRESIDENT

Visits made (or planned) on behalf of the Society by the President

Visit to Secretary-elect, Prof Haim Levanon, Jerusalem, Israel August 9-11, 1999 Following the Denver meeting last year, I was able to travel London-Tel Aviv and return on my round the world ticket at no extra cost. In that way I was able to spend a day with Haim Levanon to brief him about the nature of the work involved as Secretary of the Society. Face-to-face meetings are very

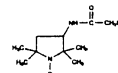
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important. There was no cost to the Society apart from the cost of the return fare on the shuttle bus from Tel Aviv to Jerusalem.

Visit to Vice-President, Prof Hiroaki Ohya-Nishiguchi, Yamagata, Japan November 3-5, 1999 Following the 2nd Asia-Pacific EPR Symposium in Hangzhou, China, I was able to spend two days in Japan in order to meet the new Vice-President, Professor Ohya. This was very worthwhile and helped him to think of the role he could play as Vice-President, particularly in view of the pending election of two further Vice-Presidents from different geographical regions. He sees his role as encouraging EPR and membership of IES in Asia. There was no cost to the Society.

Proposed visit this Friday to see the Treasurer, Dr Chris Felix, in Milwaukee Immediately following the Symposium in Denver, I am setting off for a quick trip to Milwaukee to work through Society finances with Treasurer, Dr Chris Felix. Towards the end of the year we should be able to publish in the Newsletter a statement of accounts that is up-to-date.

Proposed visit to Russia for the Zavoisky Prize Celebrations and Conference 26-30 Sept 2000 It was my hope to attend the Zavoisky Prize Celebrations at least once during my tenure as President. Thus I have resolved to attend this year. I look forward to being able to extend the congratulations of Society in person to this year's winner, Professor Harden McConnell. Professor McConnell was of course IES Gold Medallist for 1997.

Letters Written on behalf of colleagues in other parts of the world

Upon request from colleagues in Canada, I wrote to the head of the Canadian Research Council regarding lack of support for EPR research in that country. I received no reply but there are some indications of improvement in the meantime. I provided a supporting letter for Dr Frank Mabbs in the UK urging the maintenance of the EPR service in the UK.

ISMAR

I have recently been in correspondence with Professor John Waugh, President of ISMAR, to explore ways in which the two societies can cooperate. The matters I raised will be discussed by the next ISMAR Council Meeting. In particular we have offered to assist with the EPR section of ISMAR conferences in the future. Already this year I have provided a fair amount of informal advice to our colleagues in Israel responsible for the EPR section of next year's conference.

Awards 2000 & Arrangements for Presentations

The list of Award winners is attached. I am happy to report that the Gold Medal, Silver Medals for Biology/Medicine, Chemistry and Instrumentation and the Fellowships to Professor Noboru Hirota and Bruce McGarvey will all take place during this EPR Symposium. Last week Vice-President Kev Salikhov presented Gus Maki's Fellowship Certificate during the Ampère meeting in Lisbon. Hal Swartz will present the Young Investigator Awards [medals and certificates] to the joint winners, Bernard Gallez and Karsten Mäder at the Spin Trapping meeting in Marseille, 27-31 August. At the time of writing I am trying to arrange for the Fellowship to Anders Ehrenberg to be presented at the International Conference on Magnetic Resonance in Biological Systems in Florence by Vice-President Sandy Eaton. Finally, Tengiz Sanadze, who also makes the splendid medals for the Society, is unable to attend international meetings this year and I have posted his Certificate and Citation that will be presented, on our behalf, at the Georgian Academy of Sciences.

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I want to thank those who made nominations for each of the awards and for the committees that worked so diligently to make the decisions.

Awards 2001. This year we have called for nominations for 2001 awards by 15 November, a full two months ahead of this year's process. (See EPR Newsletter, vol. 11#2) This will give us plenty of time to arrange presentations at major conferences next year. In particular, the organisers of ISMAR next year in Israel have expressed the hope that at least our Gold Medal presentation might take place during that meeting.

We record our thanks to Professors Sandy and Gareth Eaton for making it possible for the IES General Meeting to take place.

John Pilbrow, President

IES Awards —

Call for Year 2001 IES Awards Nominations—

As announced in the previous issue, confidential nominations for all 2000 awards are to be sent directly to the President, International EPR Society, Prof. John Pilbrow, Monash University, Dept. of Physics, Clayton Victoria, Australia 3800 by **November 15, 2000**. Later arrivals will be held for consideration for Year 2002. Nominations must include a draft citation of about 150 words on the nominee that may be used in the *EPR Newsletter* if the nominee is selected to receive an award, and sent in an envelope marked "Confidential: to be opened by addressee only." Alternatively, nominations and the accompanying 150 word citation may be sent either as an e-mail text message or as an attachment in RTF format readable on a PC to the following e-mail address: john.pilbrow@sci.monash.edu.au

We repeat here the Society's award policies: Awards are not restricted to IES members, but the committees may take membership into account when deciding on the award winners.

The **IES Gold Medal** is the premier award of the Society and it stands with the Bruker and Zavoisky Prizes as being one of the three major awards recognising outstanding achievements in EPR. Nominations may be made in any field of EPR, though the Gold Medal Committee will be mindful of the areas of the Bruker and Zavoisky Awards for that year.

Silver Medals: Four Silver Medals are awarded annually. These are in the following categories: Chemistry, Physics/Materials Science, Instrumentation, and Biology/Medicine.

Young Investigator Awards: Each year's winner must be under 35 years of age on January 1 of the award year.

Fellows of the Society: This title is to be conferred only on those who have made truly outstanding contributions in EPR theory and practice. It is intended for particularly distinguished scientists (hopefully, IES members) who are either retired or are close to retirement. The highest international standards being applied to the recognition of those worthy of this distinction, their formal connection with the Society will enhance its own image.

Late nominations for 2001 IES awards will not be considered until the following year but will be held over for consideration for the 2002 award year. The Executive will stick to a strict timetable to provide ample time to arrange appropriate award presentations at major conferences later in the year.

Previous IES Awards Winners—

Gold Medal: 1992-George Feher; 1993-James Hyde; 1994-Jack Freed; 1995-Sam Weissman (Chemistry); 1996-Kev Salikhov (Physics & Instrumentation); 1997-Harden M. McConnell (Biology & Medicine); 1998-Arthur Schweiger (Chemistry); 1999-Brian Hoffman; 2000-Wayne L. Hubbell.

Silver Medals Biology/Medicine: 1994-Hal Swartz; 1995-Lev Blumenfeld; 1996-Ron Mason; 1997-Anatole Vanin; 1998-Ed Janzen; 1999-Jack Peisach; 2000-Larry Berliner.

Silver Medals, Chemistry: 1994-Keith McLauchlan; 1995-Clyde Hutchison; 1996-Klaus Möbius; 1997-Hanns Fischer; 1998-Richard W. Fessenden; 1999-Yuri Tsvetkov; 2000-Larry Kevan.

Silver Medals, Instrumentation: 1994-Wojciech Froncisz; 1995-Jan Schmidt; 1996-Johann-Martin Spaeth; 1997-Roger Isaacson; 1998-Bill Mims; 2000-Sankaran

Subramanian.

Silver Medals, Physics/Materials Science:

1999-George Watkins; 2000-Klaus-Peter Dinse.

Young Investigator Awards: 1994-Devkumar Mustafi (Univ. Chicago); 1995-R. David Britt (Univ. California); 1996-Gunnar Jeschke (Univ. Bonn); 1997-Robert Bittl (Techn. Univ. Berlin); 1998-Alex Smirnov (Univ. Illinois); 1999-Ilya A. Shkrob (Argonne National Lab); 2000-Joint Awards to Bernard Gallez (University of Louvain) and Karsten Mäder (F. Hoffmann-La Roche Ltd.).

IES Fellows: New for 2000: Noboru Hirota, Anders Ehrenberg, August H. Maki, Bruce R. McGarvey, Tengiz Sanadze. **Prior to 2000:** See page 1 of this issue.

Nominations Open for the Voevodsky Prize 2001

In memory of Academician V.V. Voevodsky and commemorating his 80th anniversary, the Institute of Chemical Kinetics and Combustion of the Siberian Branch of Russian Academy of Sciences and the International Tomographic Center, established in 1996 the Voevodsky Prize, now recognized by the following: Groupement Ampère, International Society of Magnetic Resonance (ISMAR), International EPR (ESR) Society, Committee of the European Federation of ESR groups, Novosibirsk State University. This Prize and diploma are awarded to Russian and foreign scientists in turn, for outstanding uses of radiospectroscopic methods to elucidate mechanisms of chemical reactions, structure and properties of active intermediates, elementary reactions in photo- and radiation chemistry.

The Voevodsky prize has been awarded once every two years since 1997, when a Conference dedicated to the Academician V.V. Voevodsky's memory is held. The first Voevodsky Prize was

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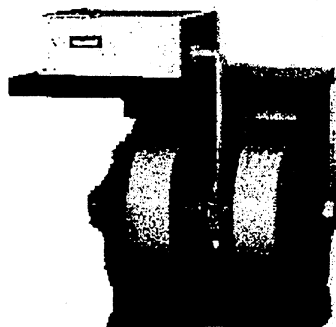
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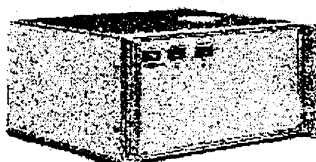
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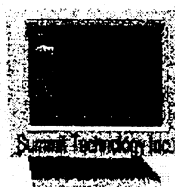
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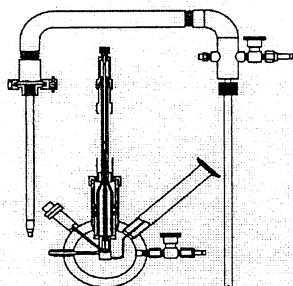
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awarded in 1997 to Professor Anatoly Buchachenko (Institute of Chemical Physics, Moscow), the last to Professor Arnold Hoff (Leiden University, Netherlands) in 1999. The award is based on a competition. Candidates may be nominated by scientific institutes or by scientists. The results of the competition are summed up by an Award Committee. The current active Award Committee:

V.I. Goldansky (Moscow), K.A. McLauchlan (Oxford), Yu.N. Molin (Novosibirsk), J.R. Norris (Chicago), R.Z. Sagdeev (Novosibirsk) and the Chairman, Yu-D. Tsvetkov (Novosibirsk). The members of the Award Committee do not participate in the competition.

The Voevodsky prize (2000 USD in 2001) and diploma will be presented at the session of the Scientific Council of Institute of Chemical Kinetics and Combustion or during an international conference in 2001. An Awardee must participate in the session (or conference) and deliver a lecture on his scientific work.

The Award Committee welcomes nominations before the deadline for submissions, March 1st, 2001. They should be accompanied by a brief summary of achievements of the nominee, covering no more than two pages and should be submitted to:

Prof. Yu.D. Tsvetkov,
 Institute of Chemical Kinetics and Combustion
 Russian Academy of Sciences, Siberian Branch
 6300090, Novosibirsk-90
 Institutskaya, 3, Russia

Fax: 7-3832-342350

E-mail: tsvetkov@ns.kinetics.nsc.ru

TIPS and TECHNIQUES

Beware of O₂! Molecular Oxygen Artifacts in EPR Experiments at X-band and at High Magnetic Fields (W-band, 95 GHz) - Practical Implications for Studies of Metalloproteins and Many Other Paramagnetic Substances

by A. I. Smirnov^{a,b}, R. B. Clarkson^a, R. L. Belford^a

^aIllinois EPR Research Center, University of Illinois, 190 MSB, 506 S. Mathews, Urbana, IL 61801 and ^bDept. of Chemistry, North Carolina State University, Raleigh, NC 27695-8204.

INTRODUCTION

This is a cautionary tale. EPR spectroscopy is a powerful tool to characterize paramagnetic centers, such as metal ions in metalloproteins. Analysis of cw EPR spectra yields not only the ion

oxidation state but also detailed information on ligand field and magnetic coupling with other paramagnetic centers. As the electronic relaxation time of many ions is very short at room temperature, the experiments are typically carried out at 2-20 K. However, even under these conditions the EPR spectra of many metalloproteins are rather weak because of the low concentrations of indigenous paramagnetic metal ions. The signals are also weak because of very broad spectral features which for disordered samples sometimes spread over hundreds and even thousands of Gauss. Often, the local environment of paramagnetic ions is quite heterogeneous and this also contributes to so-called "strain effects", leading to some extra broadening. Some ions may be in several different states and some protein samples also have paramagnetic impurities. All this makes assignments and analyses of metalloprotein EPR spectra nontrivial, especially if the signal/noise ratio is low.

For all these reasons special care should be taken to avoid undesirable artifacts in EPR spectra of metalloproteins and other samples presenting similar challenges. The most common source of artifacts is contamination by paramagnetic impurities in EPR cavities. These impurities are routinely accounted for by checking the EPR baseline under similar conditions, and, if necessary, by subtracting the baseline from the experimental spectra.

Here we describe another type of artifact that can be left unaccounted for by a standard baseline check. We refer to features traceable to molecular oxygen that may accumulate in the frozen paramagnetic sample before the measurements. Because these artifact signals arise from molecular oxygen accumulated inside the EPR tube, they cannot be corrected for by a simple baseline subtraction. Of course, some practitioners in a field of EPR of metalloproteins are well aware of these oxygen artifacts. However, we have as yet found no literature data on signals from molecular oxygen in frozen air that accumulates in EPR tubes containing aqueous solutions.

The fact that molecular oxygen at cryogenic temperatures gives rise to an EPR signal has been known for many years. For example, in 1973 Kon observed EPR signals from molecular oxygen in nitrogen and carbon monoxide matrices at temperatures below 10 K [1]. However, in other matrices, such as hydrogen, xenon, carbon dioxide, molecular sieves, and silica gel, the signal was not detected. One of the conclusions of Kon's paper was that a highly symmetric environment is required in order to observe EPR from molecular oxygen. Therefore only a few matrices should satisfy this condition. Frozen aqueous solutions with some ice crystals and microcracks filled with frozen air are unlikely to provide such an environment. Thus, our observation of EPR signal from molecular oxygen was a bit unexpected.

Furthermore, in HF EPR (95 GHz) experiments we also observed oxygen artifacts even at room temperature when the air under normal atmospheric conditions was present in the EPR cavity. It is well known that although molecular oxygen is paramagnetic, its X-band (9.5 GHz) EPR spectrum in air at normal atmospheric pressure is so broad that it can be ignored for many practical purposes. Only at sufficiently low pressure (*ca.*, 0.2 Torr) is a large number of sharp lines observed [2, 3]. At Q-band (35 GHz), the peak-to-peak intensity of molecular oxygen in air is still rather weak, but it is known to be useful for a simple and convenient test of spectrometer sensitivity. However, with a further increase in microwave frequency to 95 GHz (W-band), molecular oxygen in air at room temperature gives rise to a complex multi-line spectrum that might well cause significant artifacts in experiments with samples exhibiting broad EPR lines.

EXPERIMENTAL

X-band EPR spectra were taken with a Varian Century Series E-112 EPR spectrometer equipped with a 12" magnet that is capable of magnetic field sweeps from 0 to 1.5 T. The spectrometer was outfitted with an Air Products (Allentown, PA) variable temperature positive flow cryostat. The W-band (95 GHz) spectrometer constructed at the University of Illinois EPR Research Center is described elsewhere [4]. High-quality clear-fused quartz tubes were used for all measurements. Some measurements were carried out with empty EPR cavities purged with appropriate gases and gas mixtures.

RESULTS AND DISCUSSION

EPR spectra of molecular oxygen at room temperature and normal atmospheric conditions.

Fig. 1-B shows a typical X-band EPR spectrum of molecular oxygen in air at room temperature and atmospheric pressure. Although the TE₁₀₂ resonator was empty, a background signal from 0 to *ca.* 0.6 T was evident. The background signal was corrected by spectral subtraction of the signal recorded with an argon-purged cavity (Fig. 1-A). Fig. 1-C shows the result after correction.

Hyde and Subczynski [5] reported EPR spectra of molecular oxygen in air at X- and Q-bands. At X-band the spectrum of molecular oxygen was similar to that shown in Fig. 1. This signal becomes detectable only above 0.4 T, so it does not interfere with the EPR signals from free radical species observed at *ca.* 0.3 T (*g*=2.0) and paramagnetic metal ion centers with apparent *g*-factors greater than 2.

At Q-band, according to Hyde and Subczynski [5], the lines move closer to *g*=2 but are rather weak and broad (width greater than 0.05 T). Therefore, for many practical applications at X- or Q-band, there is no need to thoroughly eliminate the oxygen background signal by, *e.g.*, purging the EPR cavity with nitrogen.

Figure 2 shows a typical W-band (95 GHz) EPR spectrum of molecular oxygen in air at room temperature and

atmospheric pressure. As a control, a cavity background check was performed under continuous purging with helium gas. The background is a bell-shaped curve, characteristic for non-optimally tuned modulation coils that interact with the external magnetic field. Note the absence of impurity signals. Thus, the signals we

observed in the *g*=1.7-3.4 region are due to molecular oxygen in air. There is great risk that such signals may interfere with, or be mistaken for, EPR spectra of samples, especially paramagnetic metal ions. Therefore one should be very careful to keep the resonators of HF EPR spectrometers oxygen-free.

"Frozen-air" artifacts in cryogenic X-band EPR experiments:

In some variable-temperature EPR accessories used for cryogenic EPR measurements, the end of the sample tube is open to the atmosphere. Under these conditions, low

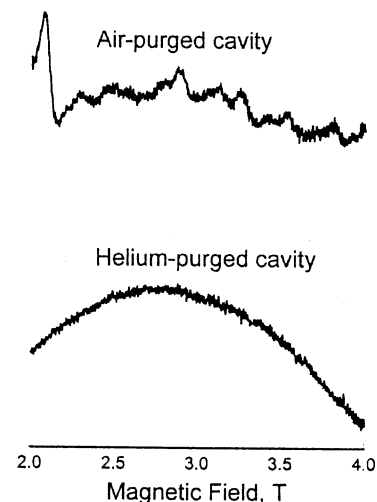


Figure 2. Top: Typical W-band (95 GHz) EPR spectrum of O₂ in air at 293 K and 1 bar. 4.0 T scan; 4 min. sweep; 1 mW incident power; 2 G modulation. Bottom: No air, no O₂.

temperature at the sample region leads to condensation of not only water but also gases and accumulation of these gases in a solid phase. Even if the tube is capped but the seal is not vacuum-tight, some accumulation of solid gases may occur. This is not only dangerous because of risk that the tube will explode during rapid warm-up, but also leads to specific artifacts due to EPR signal from molecular oxygen in solid matrices.

A series of X-band EPR spectra taken at 9 K (Fig. 3) demonstrate this point. Accumulation of solid air in an open EPR tube leads to strong EPR signals spreading from 0 to 1.5 T (Fig. 3-A). Even when the tube was filled with argon-purged water-ethanol mixture (to form a better glass) the signal from molecular oxygen was still present (Fig. 3-B). Only when the tube was flame-sealed before the experiment did the signal from molecular oxygen disappear (Fig. 3-C). Under the same experimental conditions, cavity and variable temperature insert have essentially no background signal (Fig. 3-D).

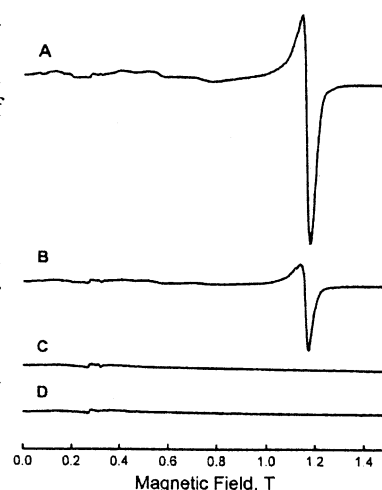


Figure 3. X-band EPR spectra at 9 K. A: Open sample tube. B: Argon-purged H₂O-C₂H₅OH glass. C: Tube sealed before experiment. D: Background - cavity with VT insert at same conditions.

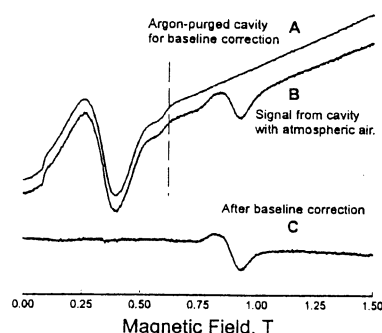


Figure 1. Typical X-band EPR spectrum of O₂ in air at 293 K and 1 bar. 1.5 T scan; 4 min sweep; 60 mW incident microwave power; 32 G modulation. Spectrum C, after baseline correction.

With increasing temperature, the EPR signals from molecular oxygen in frozen air become broader and disappear above ca. 30 K. At 9 K (Fig. 4-A) the oxygen lines cover a broad range of apparent g-factors including "high-spin" (e.g., metalloprotein) regions (effective g-factors from ca. 3 to 5). At 24 K (Fig. 4-B), only the 1.15 T feature remained observable. The spectrometer parameters were kept the same for all spectra in this series.

EPR signals from frozen air at 9K were observed with both transverse and longitudinal microwave excitation (Fig. 5), though the longitudinal signal was less intense.

Even with the EPR tube filled with a water/glycerol mixture (7/3 v/v), a longitudinal EPR signal was still visible (Fig. 5-C).

The signals we observed from frozen air samples have a similar spectral feature at the same apparent g-factor as the signal of molecular oxygen described by Kon [1]. In Kon's study, the signal appeared at around 1.15 T and was not detectable above 13 K on account of extensive line broadening. The signal was ascribed to the molecule's carrying out some torsional oscillation near the equilibrium position with the molecular axis perpendicular to the direction of external magnetic field. It was analyzed in terms of the following spin Hamiltonian:

$\mathcal{H} = D[S_z^2 - S(S+1)/3] + \mathbf{B} \cdot \mathbf{g} \cdot \mathbf{S}$, with the total spin $S=1$ and the z axis along the molecular axis. From EPR data at reduced pressure, g is 2.00 and D is -3.96 cm^{-1} , so the oxygen signal should be observed at roughly 1.2 T. That is a significantly higher field than experimentally observed [ibid.]. The discrepancy was explained by existence of torsional oscillations of an oxygen molecule in a nitrogen matrix. The height of the barrier was estimated to be $V_0 = 152 \text{ cm}^{-1}$ [ibid.].

In contrast to Kon's method of mixing research-grade oxygen and nitrogen, our samples were prepared from atmospheric air and contained other gases, water, and impurities. The main surprise was that even when the EPR tube was filled with glassy solvent (water/ethanol or water glycerol/mixtures) and the tube remained open to air, some similar but less intense signals were observed. We

speculate that the latter signals originate from the same molecular oxygen primarily in the nitrogen matrix formed in microcracks and/or void spaces formed between the frozen solvent and the tube, owing to different temperature expansion coefficients. In addition to the main 1.15 T signal, some other less intense EPR lines were observed in the 0.0-0.3 T field range. These lines could be due to different oscillation barrier heights for some of the oxygen molecules and/or to several ferromagnetically-coupled oxygen molecules, which thus possess effective spin greater than 1.

It is clear that the presence of unexpected molecular oxygen in frozen solution samples (e.g., due to the storing of open-ended EPR sample tubes containing samples such as proteins in a small bench-type liquid-nitrogen dewar prior to EPR measurements) could result in undesirable artifacts spreading over a wide field range. The artifacts can be easily avoided by preventing oxygen accumulation by, e.g., sealing the ends of the tubes. Finally, the background of a high-field EPR cavity is not as bad as it initially appears. **But just don't forget to remove that atmospheric oxygen!**

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4. Nilges, M. J., Smimov, A. I., Clarkson, R. B., and Belford, R. L. *Appl. Magn. Reson.*, 16(2): 167-183 (1999).
5. Hyde, J. S. and Subczynski, W. K. in *Biol. Magn. Reson* 8, L. J. Berliner and J. Reuben, Eds., Plenum, NY, 1989, pp. 399-426.

Acknowledgments: Thanks to John Weil for a valuable commentary. This work was carried out under the auspices of the Illinois EPR Research Center (NIH Grant RR01811).

NOTICES of MEETINGS

NOTICE: NOTICES AND UPDATES ABOUT SOME MEETINGS ARE NOT PRINTED IN THIS COLUMN IF THE INFORMATION ARRIVES TOO LATE OR IF SPACE IS LIMITED. BUT SUCH MEETINGS MAY BE ANNOUNCED ON THE EPR NEWSLETTER WEB SITE WITH LINKS TO DETAILED CONFERENCE INFORMATION WHERE POSSIBLE. CONTACT IERC@UIUC.EDU TO HAVE YOUR MEETING ADDED-
<http://ierc.scs.uiuc.edu/news.html>

34th ANNUAL INTERNATIONAL MEETING of the ESR GROUP of the ROYAL SOCIETY of CHEMISTRY. "ESR Spectroscopy; Recent Advances and Applications", March 31 to April 4, 2001, University of Bristol, UK.

The 2001 Conference of the ESR group of the Royal Society of Chemistry, will take place from Sunday 31st March to Thursday 4th April 2001, in Wills Hall at the University of Bristol, UK. The conference will be located in a planned Conference Centre, with both ensuite and standard rooms available.

The conference, titled "ESR Spectroscopy; Recent Advances and Applications," will cover all aspects of ESR in biology, chemistry and physics. The format of the meeting will consist of a number of plenary lectures (of 50 minute duration) followed by a series of short oral presentations (of 20 minute duration). Applicants interested in making an oral presentation at

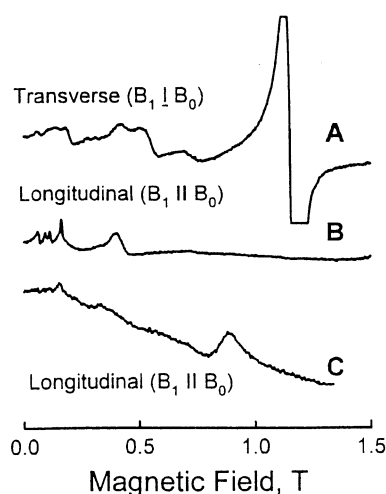
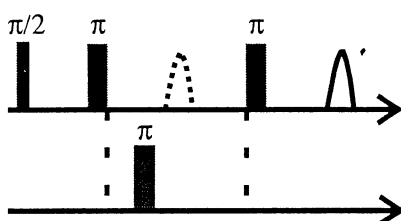
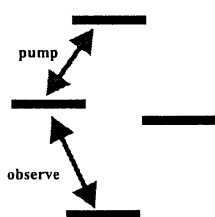


Figure 5. Signals from O_2 in frozen air at 9 K. A: $\mathbf{B}_{\text{static}} \perp \mathbf{B}_{\text{osc}}$; B: $\mathbf{B}_{\text{static}} \parallel \mathbf{B}_{\text{osc}}$; C: water-glycerol mixture, $\mathbf{B}_{\text{static}} \parallel \mathbf{B}_{\text{osc}}$.

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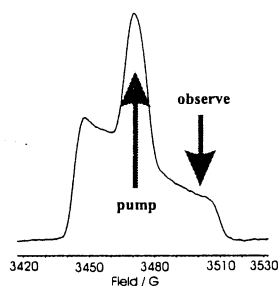
Dead-Time Free DEER



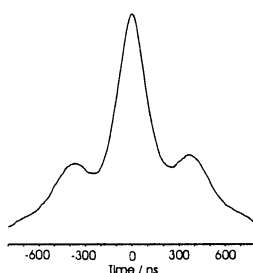
Electron-Electron Spin
Dipolar Interaction

Distance between Electron Spins

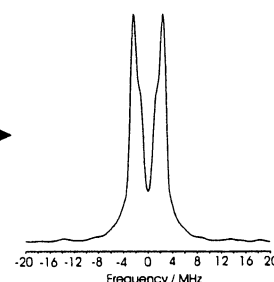
ESE field swept spectrum



4 pulse DEER time domain signal



Dipolar spectrum with $R = 28 \text{ \AA}$



Reference: M. Pannier, S. Veit, A. Godt, G. Jeschke and H.W. Spiess,
JMR 142, 331 -340, 2000
R.G. Larsen and D.J. Singel, J. Chem. Phys, 98 (7), 5134 - 5146, 1993

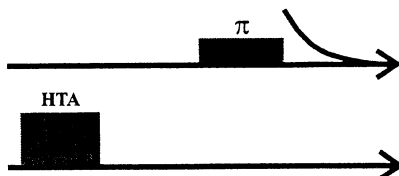
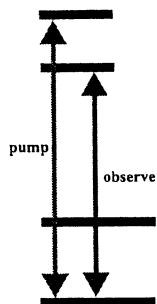
Sample: Nitroxide Biradical, courtesy Gunnar Jeschke

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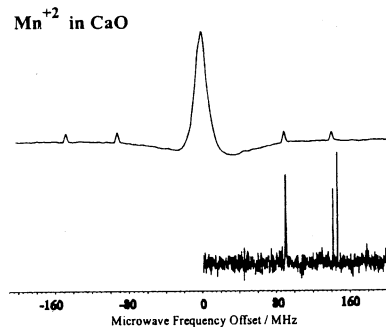
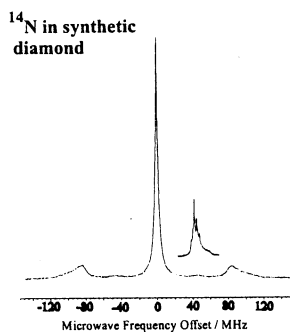
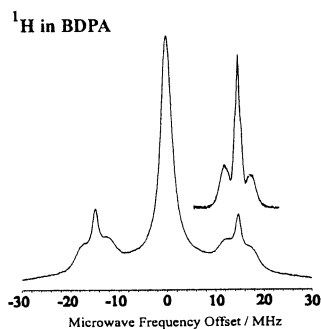


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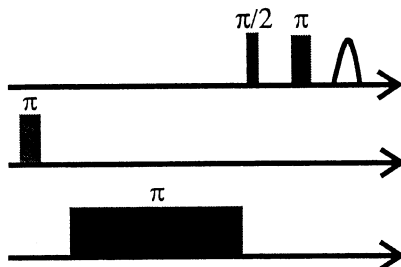
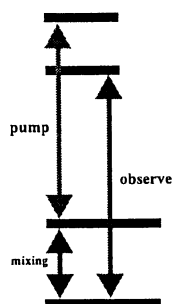


pump forbidden transition
observe allowed transition
measures the NMR spectrum



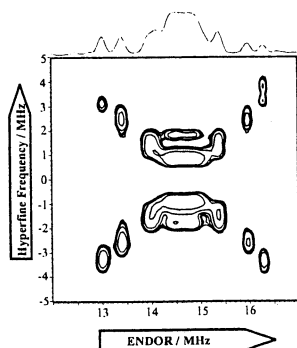
Reference: P. Schosseler, Th. Wacker and A. Schweiger, Chem. Phys. Lett. 224, 319-324, 1999

Electron-Nuclear-Electron Double Resonance

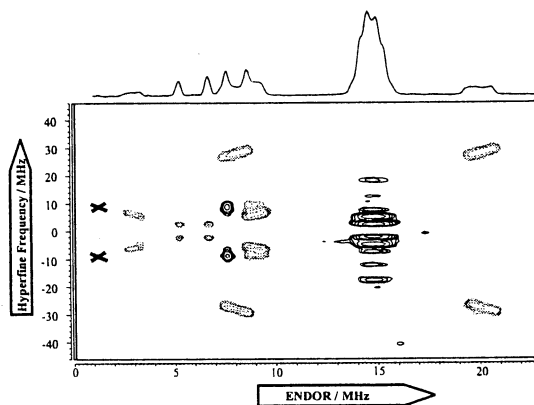


observe allowed transition 1
pump allowed transition 2
connect 1 and 2 by RF

measures Hyperfine Selective ENDOR



¹H in a malonic acid single crystal



¹H
¹⁹P
¹⁹⁵Pt
in a powder vanadyl complex

Reference: H. Thomann and M. Bernardo, Chem Phys Lett, 169, 5 -11, 1990

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the conference, can do so by sending an abstract to the secretary of the group prior to the meeting. It is envisaged that a number of student bursaries will also be available.

The following speakers have so far agreed to give plenary lectures at the meeting:

Prof. J. Hüttermann, Homburg, Germany (the Bruker Lecture); Dr. Barney Bales, California State University Northridge, USA "Application of Precision EPR to Problems in Colloid Chemistry"; Dr. Gerard W. Canters, Leiden University, The Netherlands; Prof. Neil Connelly, University of Bristol, UK "ESR Spectroscopy and Organometallic Electrochemistry"; Prof. M.C.W. Evans, University College London, UK "Electron transfer processes in oxygenic photosynthesis"; Prof. Bruce C. Gilbert, University of York, UK; Prof. Wayne Hubbell, University of California Los Angeles, USA "Site-directed Spin Labelling Approaches Protein Structure and Dynamics"; Dr. Paul J. Krusic, DuPont Co., Wilmington, USA, "From Buckyballs to gas-phase ESR"; Dr. John Maher, University of Bristol, UK, "EMR in Bristol: the last 10 years!; the next 10 years?"; Dr. Mark Newton, King's College London, UK "ESR, ENDOR and optical studies of radiation damage defects in diamond"; Prof. Christopher Rhodes, Liverpool John Moores University, UK "Hydrocarbon Activation in Zeolites"; Dr. Alex I. Smirnov, Illinois EPR Research Centre, USA; Dr. Zbigniew Sojka, Jagiellonian University, Poland. "Paramagnetic molecules at catalytic surfaces".

Further details on this conference will be posted onto our Web page [<http://www.cf.ac.uk/esr/norwich/Bristol1.html>] as soon as they become available.

Joint Annual Meeting of INTERNATIONAL SOCIETY for MAGNETIC RESONANCE in MEDICINE and ESMRMB, April 21-27, 2001 Glasgow, Scotland

On behalf of the Scientific Program Committee, I would like to invite you to the Joint Annual Meeting ISMRM-ESMRMB, which will be held in Glasgow, the heart of Scotland, April 21-27, 2001. After a long six years, the annual meeting of the ISMRM is returning to Europe, where it will be organized in conjunction with the ESMRMB. Building upon the very successful architecture of past meetings, the Glasgow program will be designed to fulfill the needs and aspirations of MR- scientists and clinicians alike. Devoted to the development and clinical application of magnetic resonance technology in medicine, the Scientific Program Committee will incorporate all aspects of MR research and at the same time provide the broadest and most in depth educational effort ever. Introductory as well as advanced level clinical and methodological courses will be offered over the weekend as well as during the week parallel to the scientific sessions. Up to

50 hours of CME credit will be offered for attendance of the educational track and/or the meeting.

The Joint Annual Meeting ISMRM-ESMRMB in Glasgow will provide a forum for scientific interchange among our colleagues working on methodological developments as well as applications of MR. Aiming at the highest level of understanding and innovation, the program will be designed to maximize participation of experts from fields related to magnetic resonance in medicine. Plenary lectures will reflect the multi-disciplinary character of MR in medicine. By comparing MR imaging technology to competing modalities, including ultrasound, CT, nuclear medicine, and optical imaging, the diagnostic potential of MR in the 21st century will be explored. New contrast agents and the availability of specialized MR systems, as well as functional and multinuclear MR techniques will be highlighted. The societal dimension of MR in medicine will be explored by focusing on means to broaden MRI access and accommodate the needs of an aging population.

Attendees will be exposed to the highest level of MR - science and education - in the very special atmosphere of Scotland. The local organizing committee, headed by Donald Hadley, has worked very hard to assure that this meeting will be remembered not only for great plenary lectures, innovation presentations, and interesting posters, but also for Scottish culture, sites, and companionship.

The SPC invites you to join us at the Joint Annual Meeting ISMRM-ESMRMB. We look forward to your presence and contributions.

Jörg F. Debatin, M.D.

Chairman, Scientific Program Committee

We are looking forward to welcoming you all to Glasgow, Scotland, for the first joint ISMRM and ESMRMB meeting to take place in the UK. The meeting will be held in the Scottish Exhibition and Conference Center (SECC) in the heart of Glasgow on the banks of the River Clyde. The SECC offers a combination of advanced technical facilities and friendly efficient service in an excellent location, only eleven miles from the City's international airport and a ten-minute walk from the City centre. It has its own railway station and bus terminus linking it to Glasgow's excellent public transport system. Fast road access via motorways link it to the rest of the UK and Europe with ample parking available at the Centre. Accommodation ranges from University halls of residence to five star hotels, all within easy reach of the SECC and with two hotels on site. Eating out is a lively and cosmopolitan experience with cafe bars and restaurants to suit every palate serving everything from pub food to haute cuisine.

Glasgow is the largest city and business capital of Scotland (pop. 765K). It is an international gateway renowned for the range and quality of its fine art museums and galleries, for the warmth and humour of its people. It is a city teeming with heritage and culture with a splendid pot pourri of arts and entertainment to suit all tastes. It prospered on trade with North America and most famously on shipbuilding, becoming the second city of the British Empire in the 19th century. After the demise of much of the heavy engineering, a massive regeneration has taken place over the last fifteen years with "high tech" silicon based industries, pharmaceutical, banking, insurance, and the service sector now providing the main employment. Today this rich cultural and industrial heritage is

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displayed in more than 20 museums and galleries, most of which are free to visit, while in 1999 it was chosen as UK City of Architecture and Design.

Glasgow and its Universities have contributed hugely to the basic science on which MRI and MRS developed. Three of the key names are those of Watt and Kelvin, both Glaswegians, and Maxwell, who came from the South of Scotland. These eminent pioneers who made it all possible have been recognised by naming the units or mathematical relationships we all use after them. Follow in the footsteps of these giants and come to the SECC, Glasgow, to share the most recent advances in our discipline or to attend a comprehensive teaching programme in April 2001.

We hope that many delegates will wish to extend their stay in the UK and particularly Scotland. You can drive for less than an hour in any direction from Glasgow and you will find yourself in some of the world's most spectacular scenery. Loch Lomond, St. Andrews, and Edinburgh are all within easy reach of the City, while some of the finest golf courses in the world are right here on your doorstep. We look forward to giving you a hearty welcome when you come to Glasgow in 2001.

Local Organising Committee

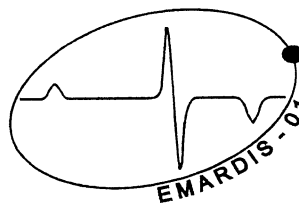
Donald M. Hadley, M.B., Ch.B., Ph.D., Chair,
David N. Firmin, Ph.D., Margaret A. Foster, Ph.D., Roy E. Gordon, Ph.D., John R. Griffiths, M.B., B.S., D.Phil., David J. Lomas, M.D., Roger J. Ordidge, Ph.D., Derek Shaw, Ph.D., Joanna M. Wardlaw, M.D., Ian R. Young, Ph.D.

The Scientific Program Committee invites submission of abstracts to be presented in oral and poster sessions at the Joint Annual Meeting ISMRM-ESMRMB. Abstracts must

contain new, previously unpublished material. Abstracts accepted for presentation will be printed in the Proceedings for the meeting. Detailed instructions for submission will be posted on both the ISMRM and ESMRMB websites. You may also call, fax, or write to: International Society for Magnetic Resonance in Medicine, 2118 Milvia Street, Suite 201, Berkeley, California, 94704, USA..

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E-mail: info@ismrm.org. Details: <http://www.ismrm.org>



**7TH INTERNATIONAL
WORKSHOP ON
ELECTRON MAGNETIC
RESONANCE OF
DISORDERED SYSTEMS.
5TH INTERNATIONAL
SEMINAR ON APPLIED
EPR, June 9-18, 2001, Sofia,**

**Bulgaria. (Organized by Bulgarian EPR Society®). Location:
Vitosha Mountain near Sofia.**

You are cordially invited to participate in the 7th International Workshop on Electron Magnetic Resonance of Disordered Systems (EMARDIS) which henceforth will have two sections - Fundamental and Applied. It continues the successful series of "EMARDIS" and "APPLIED EPR" meetings with some structural changes.

Scientific Program:

EMARDIS - Fundamental aims to cover all qualitative (structural-reactivity, kinetics, etc.) aspects of recent development in theory, experiment, methodology, instrumentation, etc. of EMR (EPR, ENDOR, ESE) spectroscopy of disordered systems (powders, glasses, liquids).

EMARDIS - Applied plans include these discussion topics: Fundamental aspects of Quantitative EPR (standards, calibration, metrology and methodology of quantitative measurements, instrumentation - new methods, advanced techniques, automatization, etc.); EPR dosimetry (monitoring of high energy radiation, high energy radiation processing control in food preservation and sterilization, dating of archeological and geological samples, etc.); EPR in biology and medicine (clinical and biomedical studies); EPR in the environmental control; EPR in petrol industry; EPR and fossil fuels; EPR in industry; EPR in polymer chemistry, etc.

Social program: Welcome party, half-day sightseeing tour in Sofia and farewell dinner are traditionally planned. A day excursion to places of regional historical and cultural interest will

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- Digital Voltage Integrators for flux change measurements.
- Precision Current Transducers and Electromagnet Power Supplies.
- Laboratory Electromagnet & Helmholtz Coil Systems for spectroscopy and imaging.

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also be offered., as will a "ladies' program".

Tentative frame program Overall, the meetings will commence with dinner on Saturday (June 9) and will finish Monday (June 18) after breakfast. Firstly, fundamental problems will be discussed. The second part will be devoted to the applications in all areas of EMR. The border day between the two parts (depending of the number of the lectures Wednesday, June 13 or Thursday, June 14) will be free (excursion) day for those who will attend both sections or leaving/arrival day to those who wish to attend only one of them. Because the number of the participants for every one of the sections are limited **please fill out the reply form on the Conference Web site and return it before January 31, 2001: www.cardif.ac.uk/epr/fed/emardis.html.**

The second circular with details and speakers, will be out in early March, 2000. **Addresses for correspondence:** N. D. Yordanov (Convenor) or V. Gancheva (Sci. Secretary), Institute of Catalysis, Bulgarian Academy of Sciences, 1113 Sofia, Bulgaria. **E-mail: emardis@ic.bas.bg**; tel: (+359) 2 - 979-2546 or 979-2549 or 724- 917 fax: (+359) 2 - 756-116.

IX INTERNATIONAL SYMPOSIUM ON MAGNETIC RESONANCE IN COLLOID AND INTERFACE SCIENCE Specialized Colloque Ampère, St. Petersburg, Russia, June 26-30, 2001.

Dear colleagues,

Boreskov Institute of Catalysis (Russia) and Universite Pierre et Marie Curie (France) are pleased to invite you participate in the IX International Symposium on Magnetic Resonance in Colloid and Interface Science.

INTERNATIONAL ADVISORY COMMITTEE

A.T. Bell (University of California, Berkeley, USA)
J.S. Blicharski (Jagellonian University, Krakow, Poland)
C. Dybowski (University of Delaware, Newark, USA)
H.J. Jakobsen (University of Aarhus, Aarhus, Denmark)
L. Kevan (University of Houston, Houston, USA)
B. Lindman (University of Lund, Lund, Sweden)
Z. Luz (Weizmann Institute of Science, Rehovot, Israel)
G. Martini (University of Florence, Florence, Italy)
D. Michel (University of Leipzig, Leipzig, Germany)
J.B. Nagy (Namur University, Namur, Belgium)
R.Z. Sagdeev (International Tomography Centre, Novosibirsk, Russia)
Yuanzhi Xu (Zhejiang University, Hangzhou, China)

ORGANIZING COMMITTEE

Chairmen: - V.N. Parmon, Boreskov Institute of Catalysis, Novosibirsk, Russia - J. Fraissard Universite Pierre et Marie Curie, Paris, France

Co-Chairmen:- O.B. Lapina , A.A. Shubin, G.M. Zhidomirov, Boreskov Institute of Catalysis Secretary: - L.Ya. Startseva, Boreskov Institute of Catalysis, V.V. Tersikh, Boreskov Institute of Catalysis, S.S. Ivanchev , St. Petersburg Department of the Boreskov Institute of Catalysis, St. Petersburg

SCOPE

The Scientific Program of the Symposium will consist of plenary lectures (40 min), oral presentations (20 min) and poster session. The scope will cover the following topics:

- NMR in the adsorbed state
- Innovative techniques in NMR and EPR
- NMR and EPR applied to microporous compounds and catalysts
- EPR in coordination chemistry
- NMR in micro emulsions

- ²H NMR in liquid crystals and membranes
- Structure and dynamics of polymers
- NMR of metal nanoparticles
- NMR imaging
- Diffusion in heterogeneous systems

The following scientists have confirmed their agreement to present plenary lectures:

Prof. P. Callaghan (Massey University, Palmerston North, New Zealand)
Prof. Dr. H. Eckert (Muenster University, Muenster, Germany)
Prof. Dr. J. Kaerger (University of Leipzig, Leipzig, Germany)
Prof. B. Lindman (University of Lund, Lund, Sweden)
Prof. Z. Luz (Weizmann Institute of Science, Rehovot, Israel)
Prof. A. Pines (University of California, Berkeley, USA)
Prof. M. Pruski (Iowa State University, Ames, USA)
Prof. Dr. H. Spiess (Max-Planck Institute fur Polymerforschung, Mainz, Germany)
Prof. J. Strange (Kent University, Canterbury, UK)

LANGUAGE

The official language of the Symposium will be English.

PROCEEDINGS

A Book of Abstracts will be published in English and distributed among the participants at the registration desk. Full texts of presentations will be published after the Symposium.

CALL FOR PAPERS

Autlors are invited to submit one-page abstracts in English in a camera ready form. Tables and graphical information will be accepted within the one-page limit. The text (2 copies) should be typed 1.5 line spaced on A4 (2.5 cm all around margin). Times New Roman 12 pt should be used. An electronic version of the abstract should be also submitted either on a floppy disk (preferably Microsoft Word 97) or by e-mail. The abstract should contain the title, the names and affiliation of the authors (please underline the name of the presenting author), full mail addresses, e-mail addresses and fax numbers.

LOCATION

St. Petersburg was founded by Peter the Great in the delta of the Neva river in 1703. Today, St. Petersburg has joined the constellation of the most beautiful cities loved and often visited by tourists. There are nearly 50 museums in St. Petersburg, wonderful gardens and parks, famous suburbs. Many museums are world known due to their rich collections of art treasures. The Symposium will be held at the St. Petersburg House of Scientists. It is situated on the bank of the Neva river nearby the Hermitage. This is one of the most beautiful places in St. Petersburg, where the historical and cultural center is located.

ACCOMMODATION

Rooms can be reserved through the Symposium secretariat in the following hotels located along the Nevskiy Prospect. All rates are quoted in USD per night: Non-star Hotel (Single: 10-15); Hotel* (Single: 30-50); Moscow Hotel*** (Single: 70; Double: 90); St. Petersburg Hotel*** (Single: 65; Double: 80) Hotel Angleter**** (Single: 260-300) Hotel Astoria***** (Single: 280-400; Double: 290-320)

MEALS

Lunches will be arranged at a local restaurant.

TRANSPORTATION

St. Petersburg Airport Pulkovo-II is located about 30 km from the city centre. A representative of the Organizing Committee will meet all the participants at the Airport Pulkovo-II and provide transportation to the hotels.

REGISTRATION FEE

The registration fee is USD 350 for each participant and USD 170 for accompanying persons, post-graduates and students before the 1st April 2001, after this date USD 400 or USD 200, correspondingly. The fee covers editorial expenditures, welcome party, 5 lunches, coffee-breaks beverages, local transportation and excursions (the Hermitage, Kasan Cathedral and others museums).

CLIMATE

Late June and early July is the time of romantic "White Nights" in St. Petersburg. Average temperature is 20-25°C. Sometimes it rains, raincoats and umbrellas are recommended.

POST-SYMPOSIUM TOUR

The Organizing Committee is pleased to offer sightseeing tour to the participants after the Symposium, July 1-2, 2001. You will have an opportunity to visit world famous St. Petersburg sights: Peter and Paul Fortress, Petrodvorets, Pushkin, Pavlovsk, St. Isaac Cathedral. You will be informed of the details of the sightseeing tour program and its cost in the Second Circular.

KEY DATES

December 1, 2000-Submission of Abstracts

February 25, 2001-Notification of acceptance. Distribution of the Second Circular

April 25, 2001-Distribution of the Scientific Program

June 25, 2001-Welcome to St. Petersburg

July 1-2, 2001-Post-tour

Please send the Abstracts and registration forms to:

Mrs. L.Ya. Startseva, Secretariat of ISMRCIS-IX
Boreskov Institute of Catalysis, 5, Prosp. Akad. Lavrentieva,
Novosibirsk, 630090, Russia. Phone/Fax: +7(3832) 34-12-97
E-mail: star@catalysis.nsk.su

All the information on the Symposium is available at the Web site of the Boreskov Institute of Catalysis: <http://www.catalysis.nsk.su>.
Registration on line is possible.

VIIth INTERNATIONAL SYMPOSIUM on MAGNETIC FIELD and SPIN EFFECTS in CHEMISTRY and RELATED PHENOMENA, July 15-20, 2001, Tokyo, Japan.

This is the 10th anniversary of the conference, which began in 1991 in Tomakomai (Japan) and continued in 1992 in Konstanz (Germany), 1994 in Chicago (USA), 1996 in Novosibirsk (Russia), 1997 in Jerusalem (Israel), and 1999 in Emmetten (Switzerland). This meeting is similar to its predecessors and will focus on various subjects concerned with the influence of magnetic fields on chemical and biochemical reactions. Topics to be covered will be: Magnetic field dependent processes in the gas, liquid, and solid phases, in restricted environments (e.g. micelles), in radiolysis reactions, in enzymatic reactions, in photosynthesis and biomimetic models. Effects at high and low magnetic fields. Applications of, and novel developments in CIDNP, CIDEF, MARY, RYDMR, and high-frequency induced CIDEF spectroscopies. Nuclear spin labeling and ortho-para conversion. New experimental developments and techniques.

Scientific Program—The scientific program will consist of invited lectures and contributed talks as well as three poster sessions. A special session celebrating the 80th birthday of Prof. Nagakura is intended. Here, the present trends of magnetic field effects in the gas phase will be viewed.

Location and Accommodation—All conference activities will take place from 18:00 of July 15 to 14:00 of July 20 at the

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hotel "Komaba Eminence," a conference hotel located in the center of Tokyo (Ohashi 2-19-5, Meguro, Tokyo 153-0044).

Registration—In order to receive further information regarding the symposium, please return the preliminary registration form promptly to the organizer via E-mail, FAX, or mail. The first circular including the details of this meeting and its preliminary registration form can be requested via E-mail. The second circular will be published about December 15 of 2000.

Address for Correspondence—Dr. Hisaharu Hayashi, Organizer, Molecular Photochemistry Laboratory, RIKEN (The Institute of Physical and Chemical Research), Wako, Saitama 351-0198, JAPAN; ☎: 81-48-467-9394, 9395, Fax: 81-48-462-4664., E-mail: spinchem@postman.riken.go.jp
Details on web site: <http://spinchem.riken.go.jp>.

21st INTERNATIONAL CONFERENCE ON DEFECTS IN SEMICONDUCTORS (ICDS XXI) Giessen, Germany, July 16 - 20, 2001.

General

The 21st International Conference on Defects in Semiconductors will be held on the Campus of Sciences of the Justus-Liebig-University in Giessen, Germany, from Monday, July 16 to Friday, July 20, 2001. It follows the tradition of this conference series starting 1959 in Gatlinburg, Tennessee, to bring together scientists from different fields of physics, chemistry and technology to discuss topics of common interest and significance in the area of defects in semiconducting materials. The foregoing conference held at Berkeley, California, 1999, again has proven that the advent of new materials and material systems, together with the demands of sub-micron technology, kept the field of imperfections vibrant and full of surprises.

Scope of the Conference

The scope of the ICDS 21 covers basic and applied research on defects, dopants and impurities in semiconductors and low dimensional semiconductor structures. It also includes modern spectroscopic methods to study single defects and aspects of recent theoretical developments. In the following a nonexhaustive list of topics of current interest is given to illustrate the scope of the meeting:

- Native defects (point, line, and extended defects in compound and elemental semiconductors and their alloys).
- Defects in wide-bandgap semiconductors
- Defects associated with structures of reduced dimensions.
- Defects and crystal growth.
- Impurities and defects in amorphous and polycrystalline semiconductors.

- Theoretical contributions
- Imaging of defects and new experimental techniques
- Defect-related phenomena (e.g. diffusion, recombination, charge and excitation transfer etc.)
- Defects and technology (e.g. processing-generated defects, gettering, ion-implantation, metastable defects for memory applications).

Conference Site

The conference will be held in Giessen in the middle of Germany. It can be easily reached by airplane via Frankfurt am Main International Airport which is located about 60 km south of Giessen. A regular 60 min. train service is available to Giessen, in addition a special bus service to the conference will be organized.

International Advisory Committee

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Heinrich-Buff-Ring 16

D-35392 Giessen, Germany

email:ICDS21@physik.uni-giessen.de

****www:<http://www.uni-giessen.de/icds21>**

43rd ROCKY MOUNTAIN CONFERENCE on ANALYTICAL CHEMISTRY; 23rd INTERNATIONAL EPR SYMPOSIUM, Denver, Colorado, July 30-August 2, 2001.

The 24th International EPR Symposium will be held at the Denver Marriott Hotel, Sunday July 29 to Thursday Aug. 2, 2001.

Papers on all areas of EPR are welcome. Also, there will be organized sessions concerning EPR at fields/frequencies both lower and higher than X-band. The high-field sessions will be co-sponsored by the National High Magnetic Field Laboratory, Florida State University. There will be a session on EPR in the brewing industry organized by Prof. Reef Morse.

The conference Web site will be announced when available.

Contact for further information: Prof. Gareth and Sandra Eaton, Department of Chemistry and Biochemistry, University of Denver, 80208 USA, 303-871-3102, seaton@du.edu.

INTERNATIONAL SOCIETY of MAGNETIC RESONANCE (ISMAR), Jerusalem, Israel, August 19-24, 2001.

The next meeting of the International Society of Magnetic Resonance (ISMAR) will take place in Jerusalem, Israel. The conference will mark the 30th anniversary of the foundation of the ISMAR and its first meeting, which took place in Israel in 1971. In the tradition of the ISMAR conferences, the meeting will provide a forum for physicists, chemists and biologists interested in NMR and ESR spectroscopy and imaging, and their applications to natural sciences and medicine.

Gil Navon, Chair,

Zeev Luz, and Daniella Goldfarb, Co-Chairs.

Information about the meeting is now available on the internet, at: <http://www.tau.ac.il/chemistry/ISMAR.html>

10th INTERNATIONAL CONFERENCE on BIOINORGANIC CHEMISTRY, Convention Center, Florence, Italy, August 26 - 31, 2001

This conference will cover many topics of interest to the EPR community. Full details appear on the following Web site:

<http://www.cerm.unifi.it/icbic/icbic10.html>

Important deadlines are

28 February, 2001: Grants applications for young researchers

31 March, 2001: Registration

31 May, 2001: Abstract submission

Contact: ICBIC10 Secretariat
CERM & Dept. of Chemistry,
University of Florence
Via Luigi Sacconi, 6
50019, Sesto Fiorentino (FI)- Italy

Fax: +39 055 4209 253; e-mail: icbic10@cerm.unifi.it.

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WORKSHOP on EPR STUDIES of VIABLE BIOLOGICAL SYSTEMS, (especially *in vivo*) and RELATED TECHNIQUES (especially oximetry), September 8-13, 2001, Dartmouth Medical School, Hanover, New Hampshire

The EPR Center for the Study of Viable Biological Systems at Dartmouth Medical School, Hanover, NH, USA (Hal Swartz, PI) is pleased to announce the scheduling of the approximately 9th meeting in the series on *In Vivo* EPR and related studies. Previous meetings include: • University of Illinois (1986); • L'Aquila #1 (1989); • Dartmouth #1 (1993); • Yamagata #1 (1994); • L'Aquila #2 (1995); • Yamagata #2 (1997); • Dartmouth #2 (1998); • Aberdeen (1999). This meeting will take place on September 8-13, 2001 and will be carried out as part of the activities of the EPR Center for Viable Systems at Dartmouth, a NIH supported resource center.

The aim is to bring together all active researchers in this field to present the latest results and concepts. The meeting will include coverage of the following general topics:

- Instrumental Approaches (*In Vivo* Spectroscopy, *In Vivo* Imaging, Overhauser Imaging, Pulse Methods, Resonators);
- *In Vivo* Oximetry;
- Development of Paramagnetic Materials for *In Vivo* Uses;
- *In Vivo* Measurements of Nitric Oxide;
- Use of *In Vivo* EPR for Pharmacology;
- *In Vivo* Measurements of Reactive Species;
- EPR Studies of Viable Cell Systems.

As in the previous meeting held at Dartmouth in 1998, the program will emphasize opportunities for scholarly and personal interactions, similar to the atmosphere of a Gordon Conference. The program will consist of oral and poster presentations, with an emphasis on discussions. The anticipated logistical/financial arrangements are to have a single registration fee covering all meals and the hotel for the period of the evening of Saturday, September 8 through dinner on Thursday, September 13. Departure will be on Friday morning, September 14. Financial assistance will be available for some young investigators. At this time it is estimated the total cost per person, including registration, rooms, and meals,

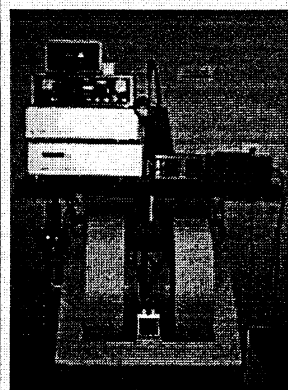
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to be about \$600 for those who stay at the Hanover Inn and share a room. If you are interested in attending, please fill out the response form on our web site:

www.dartmouth.edu/~eprctr/workshop2001

3RD INTERNATIONAL CONFERENCE on NITROXIDE RADICALS "SPIN: SYNTHESIS, PROPERTIES and IMPLICATIONS of NITROXIDES," University of Kaiserslautern, Germany, Sept. 24-26, 2001.

After two successful meetings in Pécs 1979 and Novosibirsk 1989 we are proud to host the 3rd International Conference on Nitroxide Radicals, September 24-28, 2001 in Kaiserslautern.

Kaiserslautern is located about 70 miles southwest of Frankfurt and 300 miles east of Paris. Trains Frankfurt-Paris stop in Kaiserslautern. The city is also connected by the Autobahn (Frankfurt)-Mannheim-Kaiserslautern-Saarbrücken-Paris as well as Mainz-Kaiserslautern. Trains run directly from Frankfurt Rhein-Main International Airport to Mannheim about every 30 minutes with immediate connections to Kaiserslautern. Duration: 40 min. to Mannheim and 40-60 min from Mannheim to Kaiserslautern. The city and university are located at the western rim of the Pfälzer Wald, the largest contiguous forest area in former West Germany. The town was founded in the 12th century by emperor Barbarossa (Red Beard) and has roughly 100,000 inhabitants. The university is a Technical University, founded in 1970 with somewhat above 8000 students. Congress venue will be at the university which can be reached from downtown or the railway station by frequent busses within 10 to 15 min. Bruker's ESR Division has agreed to host the participants for half a day showing their superconducting magnet production as well as their EPR facilities near Karlsruhe, located about 90 km East of Kaiserslautern.

The members of the International Organizing Committee (Lawrence Berliner, Marcus Hemminga, Kálmán Hideg, Alexander Kokorin, Hirota Fujii, André Rassat, Heinz-Jürgen Steinhoff, Harold Swartz & Wolfgang Trommer) will do their very best to provide an interesting program that will include the following topics:

- Nitroxides: synthesis, chemistry and biochemistry, application in chemistry, biochemistry, biomedicine and polymer sciences theory and simulation;
- Nitrones: chemistry and application;
- Nitric oxide: physiological role and application;
- New types of stable radicals and other recent developments;
- Special event: Excursion to Bruker Analytik GmbH, ESR Division.

For further information on this meeting, contact Prof. Dr. Wolfgang E. Trommer, Fachbereich Chemie, Universität Kaiserslautern, Postfach 3049, D-67653 Kaiserslautern, Germany;

☎: 49-631-205-2045; Fax: 49-631-205-3419; e-mail: trommer@chemie.uni-kl.de or visit the web page:

<http://iris1.chemie.uni-kl.de/spin2001.html>

FIFTH WORKSHOP on RECENT ADVANCES IN APPLICATIONS OF EPR IN BIOLOGY AND MEDICINE, Kraków, Poland, September 29 – October 3, 2001

We are pleased to announce the Vth International Workshop on Recent Advances in Application of EPR in Biology and Medicine to be held in the Ravens Conference Hall, located in the heart of the Kraków Old City – Rynek Główny – from 29th September – 3rd October, 2001. The workshop is organized under the auspices of the Vice-Rector of the Jagiellonian University and supported by the Fifth Framework Programme of the European Union, State Committee for Scientific Research and MCW Free Radical Research Center in Milwaukee. It will mark the 600 year anniversary of the rebirth of the Jagiellonian University and dedication of the Institute of Molecular Biology New Building.

The Vth International Workshop will cover key aspects of EPR research in biology, medicine and biotechnology with particular emphasis on role of oxidants in free radical processes, protection by antioxidants, structural biology, *in vivo* EPR spectroscopy and EPR spin trapping.

We invite you to participate in this exciting scientific event that, as traditional, will be accompanied by an attractive social and cultural program. **We expect to fund up to ten young investigators (\$500) to attend the meeting. Details will be posted on the web site:**

<http://www.mol.uj.edu.pl/EPRWorkshop>.

For further information please contact us at:

EPR.WORKSHOP@MOL.UJ.EDU.PL

Chair of the International Scientific Committee – Prof. Balaraman Kalyanaraman; Chair of the Organizing Committee – Prof. Tadeusz Sarna

THIRD ASIA-PACIFIC EPR/ESR SYMPOSIUM (APES'01), Kobe University, Kobe, Japan, 31 October to 4 November, 2001.

Prof. Asako Kawamori, Chairperson of LOC, Faculty of Science, Kwansei Gakuin University, Uegahara 1-1-155, Nishinomiya, 662-8501, Japan. Tel.: 81-798-54-6383/Fax: 81-798-51-0914.

E-mail: kawamori@kwansei.ac.jp

Web <http://www.ied.edu.hk/has/phys/apepr/index.htm>

NOTE: the local Website for APES'01 will be announced later in 2000. For more information about APES please visit the WWW home-page: <http://www.ied.edu.hk/has/phys/apepr>.

POSITIONS AVAILABLE & WANTED

POSTDOC POSITIONS AVAILABLE WITH THE NIEHS/NIH FREE RADICAL METABOLITE GROUP

One or more post-doctoral positions in the biological ESR group are open immediately with a salary of \$28,000 or more depending on experience. Health insurance is included. Studies of protein-derived tyrosyl and tryptophanyl radicals and of nitric oxide in humans are currently active. *In vitro* and *in vivo* investigations of free radical metabolites of toxic chemicals and drugs are also active. Individuals with a background in ESR or immunology are invited to apply. The applicant must have a Ph.D. or MD with less than five years of previous post-doctoral experience. Please send

curriculum vitae to: Dr. Ronald P. Mason, Laboratory of Pharmacology and Chemistry, NIEHS/NIH, P.O. Box 12233, MD F0-01 Research Triangle Park, NC 27709, USA. Fax: (919) 541-1043. Email: mason4@niehs.nih.gov

TWO GRADUATE STUDENT POSITIONS AVAILABLE at LEIDEN UNIVERSITY

The Department of Biophysics of Leiden University, The Netherlands, has two graduate student (PhD) positions open for (bio)physicists or physical chemists who are interested in applying various magnetic resonance techniques for unraveling the fundamental molecular mechanisms of solar energy conversion in plant photosynthesis.

The Magnetic Resonance Group of the department has a longstanding tradition of applying sophisticated electron paramagnetic resonance methods to obtain information on the structure and function of the photosynthetic apparatus that cannot be obtained by other methods. The techniques comprise state-of-the-art time-resolved flash photolysis EPR equipment at a number of microwave frequencies ranging from 2 to 130 GHz, pulsed EPR, including 1D and 2D Electron Spin Echo Envelope Modulation (ESEEM) and pulsed Electron-Nuclear Double Resonance (ENDOR) spectroscopy, optically detected magnetic resonance (ODMR), and magnetophotoselection experiments, all at variable temperatures down to 1.2 kelvin. Several of the experimental set-ups have been developed in our own laboratory.

The first project involves the investigation of spin-isotope-labeled tyrosine and quinone cofactors of so-called Photosystem II of plants with a variety of EPR methods, including 1D and 2D ESEEM, pulsed ENDOR and time-resolved EPR at various frequencies in the range 2-130 GHz.

The second project involves the development and implementation of a new ODMR spectroscopy, in which changes in the circular dichroism of the photosynthetic preparation are measured and correlated with the detailed structure of the cofactors and their protein environment.

The two projects represent two different approaches aiming at understanding the mechanisms of photosynthetic energy conversion in sufficient detail to make it possible to develop environment-friendly biomimetic solar energy cells that harvest sunlight and convert it into sustainable chemical and electrical energy. The projects are embedded in a TMR Network of the European Union, comprising groups in Athens, Berlin, London, Munich, Oxford, Padova and Paris, which coordinates the investigations aimed at developing a source of sustainable energy.

The positions offered are each for a four-year term, and can be occupied as of now. Gross salary will start at 2374 Dutch



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Guilders/month plus DG 700/month special allowance, with yearly increases to DG 4037/month in the fourth year. Candidates should preferably have some experience with EPR or related spectroscopies. Experience in photosynthesis research is appreciated but not necessary. They should submit a full resume, including a list of papers and practical works, and name and addresses (with phone, fax and email) of at least two referents.

Further information about the Magnetic Resonance Group can be found at the website of the Biophysics Department, with a description of current research and a list of recent papers:

<http://www.biophys.LeidenUniv.nl/Research/RCs/>

For more information on the two projects contact Prof. Dr. A.J. Hoff, phone +31-71-5275955, fax +31-71-5275819, email hoff@biophys.leidenuniv.nl or Dr. P. Gast, phone +31-71-5275979, email gast@biophys.leidenuniv.nl. Applications should be sent to Prof. Dr. A.J. Hoff, Biophysics Department, Huygens Laboratory, Leiden University, P.O. Box 9504, 2300 RA Leiden, The Netherlands.

BOOKS AVAILABLE

SPIN LABELING I & II (Editor, L.J. Berliner). The Illinois EPR Research Center and Larry Berliner have secured from the original publishers assignment of copyright and authority to duplicate and distribute these wonderful classics. These books are out of print, but we have produced copies on durable high-quality acid-free paper and will sell them. Both volumes are bound together as one book, which opens landscape fashion. To keep the cost down, we have bound them with soft covers and plastic comb backs. The entire price will be US\$60 to anyone who picks up a copy here. Including prepaid express shipping (a week or less transit time to most places), the price will be US\$70 shipped anywhere in the United States and US\$85 shipped to a major city outside the United States. There is an extra cost of US\$10 for delivery to other than major cities outside the USA. Please contact Linn Belford in the IERC (rbelford@uiuc.edu) or check the IERC Web site (<http://ierc.scs.uiuc.edu>) for details.

EQUIPMENT & SUPPLIES EXCHANGE

EPR INSTRUMENT WANTED

We are searching for an EPR instrument in good working condition with variable temperature attachments. Contact Dr. Horia Caldararu, Romanian Academy, Institute of Physical Chemistry "I.G. Murgulescu," 77208 Bucharest, Romania, FAX: 40-1-3121147; E-mail: hcaldararu@chimfiz.icf.ro or hcaldararu@pcnet.pcnet.ro.

WANTED: VARIAN DUAL OR SINGLE X-BAND CAVITY

Varian multipurpose dual or single X-band cavity (E 231 type or equivalent), wanted. Contact : Dr. Pavel Cevc, Josef Stefan Institute, Jamova 39, Ljubljana, Slovenia, fax + 386 61 126 3269, E-mail : Pavel.Cevc@ijs.si

AVAILABLE: NITROXIDE RADICALS

A small collection of fairly well-preserved unique nitroxide radicals synthesized by Dr. L.A. Myshkina in the 1980's is now

being made available:

- 2,6-bis(N-oxylo-tetramethyltetrahydropyrid-4-yl) thiophene.
- 5-(N-oxylo-tetramethyltetrahydropyrid-4-yl) thiophene-2-yl.
- 2,6-dimethylenecyclohexanone substituted by 6-(N-oxylo-tetramethyltetrahydropyrid-4-yl) thien-2-yl residues at both alpha-carbon atoms.
- 4-chloro-4-nitro-TMP-N-oxy.

Small quantities of the following compounds are also available: • 4-bromo-4-nitro-TMP-N-oxy and • 1,4-di-TMP-butaine-bis-N-oxy.

For information about obtaining any of the above compounds, contact: A.E. Myshkin, Inst. Biochem. Phys., Russian Acad. Sci., Kosygin St. 4, 117977 Moscow V-344, Russia; NEW E-mail: Myshkin@photonics.ru

AVAILABLE: ISOTOPE-CONTAINING SPIN PROBES

A wide assortment of special ¹⁵N- and/or ²H-containing spin probes is available at moderate prices. For a catalog and price list of available compounds, contact Prof. Igor' Grigor'ev, Inst. of Organic Chemistry, Novosibirsk 630090 Russia; E-mail: maxx@nioch.nsc.ru. In the US, contact Sergei Dikanov, E-mail: dikanov@uiuc.edu

FOR SALE - NMR MAGNETOMETER

Sentec Model 1001, including 3 standard probes covering the range of 1 to 10 kG. In good working order, this 1981 model (uses NIM bin!) includes 7-digit display, 0.01 Gauss resolution, accuracy: 10-6 relative, 10-5 absolute, has automatic peak search feature, BCD output, etc. Can be bought with or without NIM bin and CRT display. Make an offer! Prof. E. J. Knystautas, Physics Dept., Univ. Laval, Quebec City (Quebec) G1K 7P4; ☎: 1-418-656-5569, FAX: 1-418-656-2040, E-mail: ejknyst@phy.ulaval.ca

WANTED: TERMINAL/MONITOR

Terminal/monitor for Bruker ECS 106 spectrometer wanted. Contact: Lon B. Knight, Jr., Furman University, Department of Chemistry, Greenville, SC 29613, USA; ☎: 1-864-294-3372; FAX: 1-864-294-3559; E-mail: lon.knight@furman.edu.

FOR SALE: VARIAN

Resonance Instruments has available:

- 1) replacement Klystrons for Varian EPR Bridges (at reduced prices) and other klystrons
- 2) VARIAN V4500-41A low/high power microwave bridge with new klystron—excellent condition
- 3) miscellaneous microwave components.

For more information on these units contact Clarence Arnow, President, Resonance Instruments. ☎: 1-847-583-1000; FAX: 1-847-583-1021; E-mail: rii@wwa.com.

NEED HELP in DESIGN and CONSTRUCTION of EPR ELECTRONICS?

The University of Denver can supply electronic design and construction services for EPR applications. Low-noise pulse amplifiers, low-noise 100 KHz preamplifiers, boxcar integrators, and pulse timing systems are available. We also supply a conversion kit to convert Varian field control units to voltage-controlled scan operation. A 6 digit 1 ppm frequency counter is available in X-, C-, S- or L-band or Megahertz versions. Complete microwave/RF bridges from 150 MHz to

L-, S-, or C-band are available from designs previously built and tested at the University of Denver. Contact Richard W. Quine, ☎: 1-303-871-2419; E-mail: rquine@du.edu.

AVAILABLE: USED VARIAN EPR EQUIPMENT

- 1) Two Varian E-3's are now being refurbished. They will meet factory specifications and will come complete with a one-year warranty. The units may also include some upgrades.
 - 2) Varian ENDOR accessory, with Varian ENDOR cavity.
 - 3) Varian TM cavity with flat cell holders and flat cells.
 - 4) Varian E-257 variable temperature controller with heater sensor and insert holder.
 - 5) Varian E-272B field/frequency lock accessory.
- Contact James Anderson, Research Specialties, 1030 S. Main St., Cedar Grove, WI 53013, USA; ☎/FAX: 1-920-668-9905.

FOR SALE: BRUKER ESP-300 RADIO-SPECTROMETER

The instrument is intended for investigation of materials by means of electronic paramagnetic resonance (EPR). It was purchased from Bruker Analytische Messtechnik GMBH by St. Petersburg quartz-glass factory "Stekvar" in 1989 and was installed in 1990 (tested in April 1990). But it was not used at all, because this research activity was later stopped at "Stekvar." The instrument was not moved and now is working completely, so it seems like new. This ESP-300 has maximum specifications (for example, there is a helium low-temperature additional device provided by Oxford Instruments) and is outfitted for double and triple resonance. There are some spare parts. System # is ZD 698. The instrument's technical details are: 1) it works in X-band (frequency: 9.79 GHz); 2) spare cavities: ER 4111 VT, ER 4114 HT, ER 4105 DR; 3) NMR magnetometer is ER 035 M with ESR in cavity probe; 4) microwave bridge is ER 044 MRDH; 5) temperature range from 3.5 K (Oxford Instruments helium low temperature unit); 6) double & triple resonance system. For further information, contact Prof. Roman Eismont, E-mail: empire@peterlink.ru; ☎: 7-812-249-02-95; FAX: 7-812-249-51-14; Regular mail: 6 Shafirovsky Avenue, St. Petersburg 195273 Russia..

FOR SALE: VARIAN ESR-9

Our research group has an EPR spectrometer, Varian ESR-9, in working order, to spare. Conditions for transfer can be discussed. Contact Prof. Astrid Gräslund c/o Torbjörn Astlind e-mail torbjorn@biophys.su.se, Dept. of Biophysics, Stockholm University, Sweden.

NEWS ABOUT IES MEMBERS

Congratulations to John A. Weil, University of Saskatchewan, on winning the Gerhard Herzberg Award for the Year 2000, presented "In Recognition of Outstanding Contributions to the Science of Spectroscopy". His Award Talk at the National Meeting of the Spectroscopy Society of Canada, in August at Winnipeg, Manitoba, was entitled "EPR, Now and Then".

Congratulations to Jan Schmidt, University of Leiden, on winning the AMPÈRE Medal.

PRESIDENT'S LETTER - continued from page 1

Zavoisky Prizes 2000. I had the privilege of attending the Zavoisky Award Celebrations and the Workshop held in Kazan from 26th – 30th of September. This year two awards were made.

The individual Zavoisky Award was received by Professor Harden M McConnell from Stanford University. This year a second award was made to Bruker Analytik for its recent outstanding development of multifrequency pulsed EPR instruments. I was pleased to be able to present the congratulations of the Society in person to both Professor McConnell and Dr Schmalbein, on behalf of Bruker. Those of us from outside Russia were very well looked after with a range of scientific and cultural activities that kept us all busy. Thanks are due to the Zavoisky Award Committee Chairman, Professor Kev Salikhov, and his colleagues for the excellent arrangements. A more detailed report will appear in a later Newsletter.

John Pilbrow

APPENDIX: IES MEETING MINUTES

Minutes of International EPR (ESR) Society General Meeting held during the 23rd International EPR Symposium, Omni Interlocken Hotel, Broomfield, Colorado, 5 pm, Tuesday, 1 August 2000.

In the Chair: Prof. John R Pilbrow, President

Introductory Remarks by the Chair: As the quorum of 20 was achieved, the meeting began at 5.05 pm. The Chairman formally welcomed Prof Hiroaki Ohya-Nishiguchi, Senior Vice-President and Prof. Sandra Eaton, newly elected as a Vice-President along with Prof. Kev Salikhov.

1. Apologies and Attendance: A total of 31 members and one proxy were in attendance. Apologies for absences were given on behalf of the Past President, Prof. Jim Norris, Vice-President, Prof. Kev Salikhov, Secretary, Prof. Haim Levanon and Treasurer, Dr. Chris Felix.

2. Report of General Meeting of the Society held on 3rd August 1999: This was accepted as a true record of that meeting, moved K. Madden, seconded S. Misra.

3. Matters arising from General Meeting not covered elsewhere on agenda: none raised.

4. Thanks: The President thanked the following people: The Office Bearers who retired in September 1999 - Vice-President, Prof. Klaus Möbius and Treasurer, Prof. Balaraman Kalyanaraman; Prof. Jim Norris, the Past President remains on the Executive under the Constitution; The new Office Bearers, Vice-Presidents, Profs. Ohya, Eaton, and Salikhov, Secretary, Prof. Haim Levanon and Treasurer, Dr Chris Felix; Prof. Linn Belford, who remains Editor of the EPR Newsletter; Chairs and members of all of the awards committees; Becky Gallivan and Martha Moore [who resigned last March] from the office in Urbana; and, finally, to Bruker for mailing the EPR Newsletters.

5. Reports

5.1 President [on behalf of the Executive] The President tabled a written report covering activities during the past year but did not speak to all items. (See President's Report above.)

5.1.1 Constitution: The President reported that the new Constitution was adopted in October 1999 on the unanimous vote of those who recorded their votes.

5.1.2 Election of Office Bearers 1999 & 2000: The President reported that a disappointing number of members voted for the Office Bearers under the old Constitution, but the election was valid as the Constitution requires a majority of members who vote without specifying a minimum number. There was a much better response in the recent election confirming the appointments of Prof.s Eaton and Salikhov as the additional Vice-Presidents required under the new Constitution.

5.1.3 Planning & Timetable 1999-2002: The President

reported that the timetable for Awards had been largely successful but that lack of copy for EPR Newsletter 11/2 of which draft copies were distributed, had made it impossible to meet the deadline set for that issue.

5.2 Treasurer: On behalf of the Treasurer, the Chairman produced a summary table of the over all financial position from 1996-2000 which showed that with a recent transfer of funds from the Regional Treasurer in Japan, and outstanding commitments for the Newsletter printing and salary payments for Martha Moore until March, the Society would be in debt to about \$6000. This results from the fact that only about 40% of those in the West who are required to pay the full amount of \$30US or equivalent have in fact paid up to 22 July 2000. The actual position would be reviewed when the President meets with the Treasurer in Milwaukee on 4 August. He noted that for budgeting purposes we need to allow about \$7,000 US to cover the cost of printing the Newsletter and a salary component of about \$10-12k US for 0.5 office staff support. There are incidental costs, postage, stationery but the since the cost of the medals is covered by our colleagues in the Republic of Georgia, there is only the cost of the courier to send the medals to the President, in this year a sum of \$58 US.

The Chairman pointed out that if 90% of those who are meant to pay the full subscription in fact paid, our dues income would be about \$27,000 apart from income from Corporate Members. In the ensuing discussion a number of possible strategies for getting members to pay dues on time were raised. These included frequent email reminders and the hope that increasingly members would pay by credit card as the facility already exists.

Hal Swartz suggested that those for whom the Society has no email address should be asked for that information.

The following motion, moved by R. Claridge and seconded by L. Berliner, was passed:

This meeting urges that the Executive take strong action to deal with the current poor financial situation and give special attention of the problem posed by the low number of paid up members.

5.3 Newsletter; do we need 3 or 4 issues per year?

No decision was made.

5.4 Website: In answer to a question Linn Belford assured the meeting that we have an up-to-date Website, the address being given in the Newsletter. There was also discussion as to whether the cost of the EPR Newsletter could be reduced if it were made available via the Web for those members with Web access. This would require an access code that could be simply a membership number allocated to paid-up members. Linn Belford asked for a poll of the meeting as to whether members would favour having the Newsletter posted on the Website, accessible by membership number. The assembly encouraged exploration of this possibility. We should enquire by email if any members would have difficulty with such an arrangement.

Linn Belford pointed out that members are still entitled to receive mailing lists and to order mailing labels.

6. IES Office

6.1 Current arrangements: Linn Belford explained that the Office in Urbana maintains the database, once payment records are sent by the Treasurer, deals with the many enquiries about membership, general correspondence and layout of the EPR Newsletter. The staff member who formerly undertook most of those tasks had resigned in March and since then those roles have been taken over temporarily by Becky Gallivan, at no cost to the Society. There is a plan to replace the office staff position at 0.25 salary cost to the Institute rather than the 0.5 level of the past. That will save the Society about \$6,000 p.a.

6.2 Long-term: The President reminded the meeting that the matter of the future of the Office had been discussed at the previous General Meeting in 1999 and it had been the view of the previous Executive that the Office should move about every 10 years. He informed the meeting that next week he would visit a lab in Europe with a view to ascertaining what would be involved in moving the Office there in October 2002 at the conclusion of the terms of office of the present Executive.

There were suggestions that we should consider paying an appropriate larger Society to run our Office for a negotiated fee.

7. Awards

7.1 Report on 2000 Awards: The President reported on award in his written report [see above]. Arrangements had worked well.

7.2 Arrangements for presentations of awards:

The President reported his pleasure that six of the twelve awards this year were being presented at this meeting. Details regarding other presentations are found in the attached President's Report.

7.3 Timetable for 2001:

The President indicated that the closing date for nominations for 2001 would be 15 November 2000, two months ahead of this year's schedule. This was to allow much more time to arrange presentations before conference organisers finalise and print programs. In particular the organisers of ISMAR 2001 hope that at least our Gold Medal presentation might take place in Israel next year. He also reassured members that those nominated, but who were unsuccessful this year, would remain eligible for consideration for a few years, unless a particular Committee advised that a particular nomination was unlikely ever to be successful. Finally, the Chairman urged all present to consider making nominations this year. He said that we need more nominations in each category than we have recently been getting.

7.4 Is a review of awards necessary? There was no time to discuss a review of awards. However the Chairman pointed out that the Physics/Instrumentation Prize was last awarded in 1998 and was replaced from 1999 by two Silver Medals, one for Physics/Materials Science and the other for Instrumentation. The first Instrumentation Award was made this year, to Prof. Sankaran Subramanian and made the point that experimental advances were not limited to physicists in the field.

8. General Issues

8.1 Recruitment of new members not discussed due to lack of time.

8.2 What kind of Society do we wish to be [or become]? not discussed due to lack of time.

8.3 Relationships with other societies [ISMAR, AMPÈRE etc.] The President reported that he had received a positive response to a suggestion to the President of ISMAR, Prof. John Waugh, to the suggestion that IES would be prepared to take responsibility for the EPR section of future ISMAR meetings. Founder President Hal Swartz explained that while IES is not large enough to organise conferences on its own, we should seek to run our own meeting, not totally on its own, but in conjunction with, say, ISMAR. This could be done every three years.

8.4 Travel Awards for graduate students: Not discussed due to lack of time.

9. Any other business: Linn Belford urged members to keep sending material for the Newsletter. The President reported that the minutes of this meeting will be published in Newsletter 11/3. The Chairman thanked Prof. Sushil Misra for taking notes of the meeting. The meeting concluded at 5:47 pm.



EPR NEWSLETTER

Volume 11, Number 4

Page 1

2000-2001

DIRECTORY ISSUE

Notice: Gerald Babcock, Prof. of Chemistry, Michigan State University, East Lansing, MI passed away in December of 2000. He was not only a prominent scientist and member of the International EPR Society but also a valued colleague and personal friend to many of us. We grieve his untimely death. An obituary will appear in Volume 12.

From the Editor— This is the Directory issue. We started assembling it in December, hoping to get it out at the end of the year. But new and updated information kept arriving from members and regional treasurers. So we decided to continue to revise for a few more weeks to make it as up-to-date, accurate, and useful as possible, and this issue is marked "2000-2001". We intend to get out four issues of Volume 12 during 2001. Please check the EPR Newsletter Web site for information including deadlines for submission of material for these issues.

URL for the Newsletter: <http://ierc.scs.uiuc.edu/news.html>

Please keep the news, notices, and technical items coming in. And members, please pay your dues through year 2001, else the Newsletters and Directories cannot keep coming! You can find the record that we have of your dues payments on the web; link from the IES Web site: <http://ierc.scs.uiuc.edu/IES.html>. And you can find instructions for payment on that site.

When submitting announcements of scientific meetings for publication in the Newsletter, please provide a plain text file.

R. Linn Belford, Urbana

Letter from the President— This edition of the EPR Newsletter containing an extended address list is being circulated once again to all Members and Sponsors. I must again remind those members behind in their subscriptions [dues] to pay up now. It is my intention during the next few months to send a personal reminder to those whose payments have lapsed. Unless we are advised that someone wishes to resign from the Society, we have continued to send each issue of the Newsletter. I will be seeking full payment of outstanding dues as is only fair and reasonable as the burden of financing the Society has continued to fall on those members who pay faithfully and often in advance! The annual subscription for those in hard currency countries remains at \$US30 or the equivalent in some other currencies as outlined in the Newsletter. It is not a high cost Society and it alone serves the EPR community worldwide.

I shall make no apology about approaching those on our books who have continued to receive the Newsletter and the benefits of the advice and information about EPR spectroscopy and who are in debt to the Society. - continued on page 2 -

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- Assistant Editor, Becky Gallivan, Urbana, IL
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- Web page: <http://ierc.scs.uiuc.edu/news.html>
- For additional information, see masthead, page 17.

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This is the official newsletter of the International EPR(ESR) Society, is supported by the Society, by corporate and other donors including the National Center for Research Resources (USA).

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Letter from the President - continued from page 1

Naturally we are always on the lookout for new members, and I urge everyone to sign up members of their own groups, including post-docs and graduate students.

The Society must move from a hand-to-mouth financial position to one where there is money in the bank and we can embark on some new initiatives as I have indicated previously.

On a more positive note, I am pleased to say that the Awards selection process is now well under way and it is my hope that we will have the results about three months ahead of last year. This should allow plenty of time to arrange the most appropriate conferences for presentations of Medals and Fellowships to take place. I thank all those who made nominations and the members of all the Awards Committees for the work they are now undertaking.

I hope to meet up with many of you at conferences in the latter half of the year and to seek feedback about how to make our Society vibrant and forward looking.

John Pilbrow, President of IES

IES Awards —

Dr. Karsten Mäder, joint winner with Dr. Bernard Gallez of Young Investigator Award for Year 2000. Citations for Year 2000 awards of the International EPR Society, with pictures of most of the awardees, were published in Volume 11, Number 3. We had no photograph of Mäder, but now we have. So here is Karsten.

IES Awards Nominations—

Nominations are closed for IES awards for Year 2001, but nominations for Year 2002 awards are welcome. As announced in the previous issue, confidential nominations for all awards are to be sent directly to the President, International EPR Society, Prof. John Pilbrow, Monash University, Dept. of Physics, Clayton Victoria, Australia 3800. Last year, the deadline for arrival was November 15. A call for nominations with an updated deadline will be published in a future issue. Nominations must include a draft citation of about 150 words on the nominee that may be read at the award ceremony and printed in the *EPR Newsletter* if the nominee is selected to receive an award. Send nominations in an envelope marked "Confidential: to be opened by addressee only." Alternatively, nominations and the accompanying citation may be sent either as an e-mail text message or as an attachment in RTF format readable on a PC to the following e-mail address: john.pilbrow@spme.monash.edu.au

Although awards are not strictly restricted to IES members, the award committees may take membership into account when deciding on the award winners.

The **IES Gold Medal, Silver Medals, Young Investigator Award, and Fellows of the Society** are described in the *EPR Newsletter*, Vol. 11 #3, 2000.

NOTICES of MEETINGS

NOTICE: NOTICES AND UPDATES ABOUT SOME MEETINGS ARE NOT PRINTED IN THIS COLUMN IF THE INFORMATION ARRIVES TOO LATE OR IF SPACE IS LIMITED. BUT SUCH MEETINGS MAY BE ANNOUNCED ON THE EPR NEWSLETTER WEB SITE WITH LINKS TO DETAILED CONFERENCE INFORMATION WHERE POSSIBLE. CONTACT IERC@UIUC.EDU TO HAVE YOUR MEETING ADDED-

<http://ierc.scs.uiuc.edu/news.html>

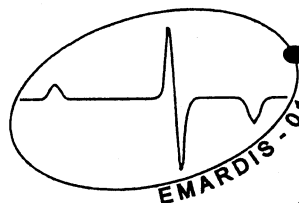
34th ANNUAL INTERNATIONAL MEETING of the ESR GROUP of the ROYAL SOCIETY of CHEMISTRY. "ESR Spectroscopy; Recent Advances and Applications", March 31 to April 4, 2001, University of Bristol, UK.

[PREVIOUSLY ANNOUNCED IN NEWSLETTER]

Details: <http://www.cf.ac.uk/esr/norwich/Bristol1.html>

Joint Annual Meeting of INTERNATIONAL SOCIETY for MAGNETIC RESONANCE in MEDICINE and ESMRMB, April 21-27, 2001 Glasgow, Scotland [PREVIOUSLY ANNOUNCED IN NEWSLETTER]

Details: E-mail: info@ismrm.org. <http://www.ismrm.org>



7TH INTERNATIONAL WORKSHOP ON ELECTRON MAGNETIC RESONANCE OF DISORDERED SYSTEMS. 5TH INTERNATIONAL SEMINAR ON APPLIED

EPR, June 9-18, 2001, Sofia, Bulgaria. (Organized by Bulgarian EPR Society®). Location: Vitosha Mountain near Sofia. [REVISED ANNOUNCEMENT]

You are cordially invited to participate in the 7th International Workshop on Electron Magnetic Resonance of Disordered Systems (EMARDIS) which henceforth will have two sections - Fundamental and Applied. It continues the successful series of "EMARDIS" and "APPLIED EPR" meetings with some structural changes.

Scientific Program:

EMARDIS - Fundamental aims to cover all qualitative (structural-reactivity, kinetics, etc.) aspects of recent development in theory, experiment, methodology, instrumentation, etc. of EMR (EPR, ENDOR, ESE) spectroscopy of disordered systems (powders, glasses, liquids).

EMARDIS - Applied plans include these discussion topics: Fundamental aspects of Quantitative EPR (standards, calibration, metrology and methodology of quantitative measurements, instrumentation - new methods, advanced techniques, automatization, etc.); EPR dosimetry (monitoring of high energy radiation, high energy radiation processing control in food preservation and sterilization, dating of archeological and geological samples, etc.); EPR in biology and medicine (clinical and biomedical studies); EPR in

environmental control; EPR in petrol industry; EPR and fossil fuels; EPR in industry; EPR in polymer chemistry, etc.

Lecturers expected: The goals of the meeting will be fulfilled through lectures given by the top specialists and selected applicants and by round-table discussions. So far, the following colleagues have agreed to deliver main lectures:

EMARDIS F: A. Alberti (I), S. R. Allayarov (RUS), K. Anderson (N), G. Grampp (A), D. Gourier (F), J. Hwang (SA), G. Jeschke (D), H. Levanon (IL), D. Lowe (UK), F. MacMillan (G), J. Michalik (PL), S. Misra (CAN), M. F. Ottaviani (I), B. Rakvin (SLO), Ch. Rohdes (UK), A. Rockenbauer (H), J. Telser (USA), S. Tero-Kubota (J), A. Wasserman (RU).

EMARDIS - A: G. Bacic (YU), A. Blank (IL), F. Callens (B), C. Chingell (USA), Y. Deligiannakis (GR), T. Herling (D), H. Hirata (J), A. Jezierski (PL), A. Lund (S), E. Lund (S), M. Mazur (SL), B. Pass (CAN), J. Pederson (DK), L. K. Pulatova (RUS), J. Raffi (F), A. R. Skinner (USA), H. Utsumi (J), W. Stachowicz (PL), A. Stasko (SL), G. Villeneuve (F).

Language and Presentations: The official language of the Workshop is English; all presentations and publications will be in English. Main lectures lasting 40 min, oral (25 min) and poster presentations are planned. The programme will also include round-table discussions and oral presentations on selected poster contribution from the participants. In addition there will be plenty of time for free evening discussions.

Tentative program: Overall, the meetings will commence with dinner on Saturday (June 9) and finish Monday (June 18) after breakfast. Firstly, fundamental problems will be discussed. The second part will be devoted to the applications in all areas of EMR. The day between the two parts (depending on the number of the lectures Wednesday, June 13 or Thursday, June 14) will be free (excursion) day for those who will attend both sections or leaving/arrival day to those who wish to attend only one of them. The number of the participants in each section is limited, so please submit the form on the conference Web site now!

Social program and Conference site:

The whole meeting will be held in a hotel situated in Vitosha Mountain, c.a 10 km from Sofia downtown. Welcome party, half-day sightseeing tour in Sofia and farewell dinner are traditionally planned for each section. In addition a day excursion to some places of regional historical and cultural interest will also be offered.

Ladies program: For the first time we now are planning to organize a ladies program. It will include accommodation, taking breakfast and dinners, attendance in all social activities of the meeting in the conference site and everyday transportation to/from Sofia for free sightseeing. Lunches will be taken in the choice of the participants of this program.

Further information: This circular is present in the web page of the European Federation of the EPR Societies –

www.cardif.ac.uk/epr/fed/emardis.html.

The second circular of the EMARDIS meeting with more details, to be distributed early in March, 2001, will also be available in the same Web page.

Addresses for correspondence: N. D. Yordanov (Convenor) or V. Gancheva (Sci. Secretary), Institute of Catalysis, Bulgarian Academy of Sciences, 1113 Sofia, Bulgaria. **E-mail:** emardis@ic.bas.bg; tel: (+359) 2 - 979-2546 or 979-2549 or 724- 917 fax: (+359) 2 - 756-116.

IX INTERNATIONAL SYMPOSIUM ON MAGNETIC RESONANCE IN COLLOID AND INTERFACE SCIENCE Specialized Colloque Ampère, St. Petersburg, Russia, June 26-30, 2001.

[PREVIOUSLY ANNOUNCED IN NEWSLETTER]

Details—Please send the Abstracts and registration forms to: Mrs. L.Ya. Startseva, Secretariat of ISMRCIS-IX, Boreskov Institute of Catalysis, 5, Prosp. Akad., Lavrentieva, Novosibirsk, 630090, Russia. Phone/Fax: +7(3832) 34-12-97 **E-mail:** star@catalysis.nsk.su. Also, all information on the Symposium is available at the Web site of the Boreskov Institute of Catalysis: <http://www.catalysis.nsk.su>. Registration on line is possible.

VIIth INTERNATIONAL SYMPOSIUM on MAGNETIC FIELD and SPIN EFFECTS in CHEMISTRY and RELATED PHENOMENA, July 15-20, 2001, Tokyo, Japan. [REVISED ANNOUNCEMENT]

This is the 10th anniversary of the conference, which began in 1991 in Tomakomai (Japan) and continued in 1992 in Konstanz (Germany), 1994 in Chicago (USA), 1996 in Novosibirsk (Russia), 1997 in Jerusalem (Israel), and 1999 in Emmetten (Switzerland). This meeting (SCM2001) is similar to its predecessors and will focus on various subjects concerned with the influence of magnetic fields on chemical and biochemical reactions. Topics to be covered will be: Magnetic field dependent processes in the gas, liquid, and solid phases, in restricted environments (e.g. micelles), in radiolysis reactions, in enzymatic reactions, in photosynthesis and biomimetic models. Effects at high and low magnetic fields. Applications of, and novel developments in CIDNP, CIDEP, MARY, RYDMR, and high-frequency induced CIDEP spectroscopies. Nuclear spin labeling and orth-para conversion. New experimental developments and techniques.

Scientific Program—The scientific program will consist of invited lectures and contributed talks as well as three poster sessions. Participants are requested to submit application to the organizer by March 19, 2001 to indicate whether or not they wish to present a lecture or a poster (or both). The organizer will inform each applicant if his/her contribution is accepted, and the length of time allocated to any lecture. The deadline for abstract is May 28, 2001.

Special Session and Invited Speakers—A special session celebrating the 80th birthday of Prof. Saburo Nagakura is intended. Here, the present trends of magnetic field effects in the gas phase will be viewed. The organizing committee has asked the following distinguished scientists to give invited talks to this Meeting: E. Bagryanskaya (Intern. Tomography Center, Russia), M. Chowdhury (Indian Assoc. for Cultivation of Science, India), A. Hoff (Leiden Univ., The Netherlands), P. Hore (Oxford Univ., UK), H. Kato (Kobe Univ., Japan), K. Kitazawa (Univ. Tokyo, Japan), G. Kothe (Univ. Freiburg, Germany), H. Levanon (Hebrew Univ., Israel), S. H. Lin (Inst. of Atom. & Mol. Sciences, Taiwan), M. Michel-Beyerle (Tech. Univ. Muenchen, Germany), J. Norris (Univ. Chicago, USA), H. Paul (Univ. Zurich, Switzerland), J. Pedersen (Odense Univ., Denmark), G. Rikken (Grenoble, France), R. Sagdeev (Intern. Tomography Center, Russia), A. Shushin (Inst. of Chem. Phys., Russia), U. Steiner (Univ. Konstanz, Germany), S. Tero-Kubota (Tohoku Univ.).

Location and Accommodation – All conference activities will take place from 18:00 of July 15 to 12:30 of July 20 at the hotel "Komaba Eminence", a conference hotel located in the center of Tokyo (Ohashi 2-19-5, Meguro, Tokyo 153-0044). A special session of the Japan-Russian Binational Symposium on Spin Chemistry will also be held in this hotel from 14:00 to 18:00 of July 20. Attendants from other countries are welcome.

Registration – The registration fee for a participant from an university or a non-profit organization will be 30,000 Yen and that from a profit-making company 50,000 Yen. These registration fees include the abstract, photograph, coffee break, Excursion, and all dinners during July 15-19 including welcome party and Banquet. Students may pay a reduced fee (10,000 Yen/Person, without Excursion and Banquet). The extra fee of students for the Excursion and Banquet will be 15,000 Yen/Person. The registration fee for an accompanying person will be 15,000 Yen, which includes the coffee break, Excursion, and all dinners including welcome party and Banquet. The deadline of usual registration is March 19, 2001. Anyone who registers after March 19 will be charged an additional fee of 10,000 Yen.

Application and Registration – Participants are requested to send Application for Attendance and Presentation (Form A), Application for Registration (Form B), Application for Accommodation (Form C) to the organizer by March 19, 2001. Application Forms A-C and further information regarding this meeting are available on the second circular, which will appear on conference web page (<http://spinchem.riken.go.jp>) about December 15, 2000.

Address for Correspondence – Dr. Hisaharu Hayashi, Organizer of SCM2001, Molecular Photochemistry Laboratory, RIKEN (The Institute of Physical and Chemical Research), Wako, Saitama 351-0198, JAPAN; ☎: 81-48-467-9394, 9394, Fax: 81-48-462-4664., E-mail: spinchem@postman.riken.go.jp
Details on web site: <http://spinchem.riken.go.jp>.

Second International Conference of the Society for Free Radical Research-Africa, University of Mauritius, Reduit, Africa, 15 - 19 July 2001. [NEW ANNOUNCEMENT]

Conference Overview: The International Society for Free Radical Research (ISFRR) is an international body dedicated to the study of all aspects of free radical chemistry and their effects in biological systems. Its rapidly growing international membership (currently 2000 scientists) from many disciplines including chemistry, biochemistry, biology, immunology, medicine, food technology, pharmacology and physics.

The Africa wing of ISFRR in collaboration with the University of Mauritius, announces the holding of its Second International Conference in Year 2001 (SFRR-Africa 2001).

Scientists of many countries will attend this major international conference in Mauritius, which will be the focus much needed to foster basic life sciences, environmental, and medical research in Africa and small island countries. (Topics: Cancer, Nutrition, Cardiovascular diseases, Occupational and environmental health, Inflammation, Molecular biology and biomarkers, Oxidative stress, Therapeutic interventions, Economics of plants and biologically active natural products, HIV/AIDS, Parasitic and other Infectious Diseases).

Program Goals: * Provide a comprehensive review of

oxidative stress chemistry with an emphasis on normal and abnormal biological functions. * Showcase the latest non-invasive methods designed to measure oxidative stress in humans for clinical purposes. * Review the latest intervention strategies designed to control oxidative stress through dietary and/or pharmacological means. * Discuss the need and criteria for development of analytical and chemical standards guidelines and best practices in measuring human oxidative stress parameters and dietary/pharmacological supplements.

Provisional List of Invited Speakers: Beatrice Pool-Zobel (Germany), Fred Kadlubar (USA), Simon Litvak (France), Mary Gulumian (South Africa), Ameenah Gurib Fakim (Mauritius), Kelvin J. A. Davies (USA), Okezie I. Aruoma (UK), Theeshan Bahorun (Mauritius), Helmut Sies (Germany), Bruce Freeman (USA), Angelo Azzi (Switzerland), Ethan W. Taylor (USA), Peter G. Waterman (Australia), Francis Trotin (France), Eduardo Lissi (Chile), Meg Tarcy (USA), Shyam Bhagwant (Mauritius), Alan Crozier (UK), Frederick Cadet (Reunion), Govindranathsing Khittoo (Mauritius), Indur Fagoonie (Mauritius), David Dexter (UK), Shinya Toyokuni (Japan), Olatunde Farombi (Nigeria), Philippe Nakiema (Burkina Faso), Gary Duthie (UK), Irfan Rahman (UK), Goerge Papanga (UK), Kense Mossanda (SA), Harprakash Kaur (UK), Alawode Oladele (USA), Rose Mlay (Tanzania), Etsuo Niki (Japan), Nick Hunt (Australia), Catherine Pasquier (France), Jean Cadet (France), Dipak Das (USA), Barry Halliwell (Singapore), Frank Brombacher (South Africa), Colin Stevens (UK), Tammy Bray (USA), Maxwell Gamfi (Ghana/Japan), Nilanjana Maulik (USA), Carmia Borek (USA).

Please contact the secretariat for details: SFRR - Africa Conference 2001, Conference Secretariat, University of Mauritius, Reduit, Tel: +230 454 1041, Fax: +230 465 6928

E-mail: y.cotobally@uom.ac.mu;

Web site: <http://www.uom.ac.mu/sfrr/index.htm>.

Conference Committee: Co-Chairperson: Goolam Mohamedbhai, President; Okezie I Aruoma, Vice-President; Theeshan Bahorun, Co-Chairs, Dept. of Biological Sciences, University of Mauritius; Ameenah Gurib-Fakim, Co-Chairs, Dept. of Chemistry, University of Mauritius.

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E-mail: info@oicainternational.co.uk

21st INTERNATIONAL CONFERENCE ON DEFECTS IN SEMICONDUCTORS (ICDS XXI) Giessen, Germany, July 16 - 20, 2001.

[PREVIOUSLY ANNOUNCED IN NEWSLETTER]

Details on web: <http://www.uni-giessen.de/icds21>

Contact: ICDS 21, Mrs. Daniela Musaeus, I. Physikalisches Institut, Heinrich-Buff-Ring 16, D-35392 Giessen, Germany. **E-mail:** ICDS21@physik.uni-giessen.de

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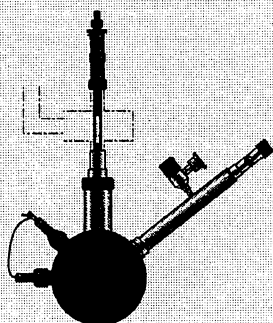
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SPECIALIZED COLLOQUE AMPERE 2001 ESR AND SOLID STATE NMR IN HIGH MAGNETIC FIELDS, Stuttgart, Germany, July 22-26, 2001

[NEW ANNOUNCEMENT]

You are cordially invited to participate in the Specialized Colloque Ampere on "ESR and Solid State NMR in High Magnetic Fields" which will take place in Stuttgart, Germany, July 22-26, 2001. The aim of the conference is to provide a forum for physicists, chemists, and biologists working in the field of high frequency ESR and solid state NMR in magnetic high fields. The Colloque is under the auspices of the Groupement Atomes et Molecules and Paramagnetiques Etudes par Resonance Electronique (Groupement A.M.P.E.R.E.). For Details, visit the web page:

<http://www.physik.uni-stuttgart.de/AMPERE2001/>

43rd ROCKY MOUNTAIN CONFERENCE on ANALYTICAL CHEMISTRY; 23rd INTERNATIONAL EPR SYMPOSIUM, Denver, Colorado, July 30-August 2, 2001.

[REVISED ANNOUNCEMENT]

The 24th International EPR Symposium will be held July 29-August 2, 2001, in Denver, at the Denver Marriott City Center, in conjunction with the 43rd annual Rocky Mountain Conference. About 150 people participate in the EPR Symposium each year, presenting over 100 papers. Approximately 1000 people attend the Rocky Mountain Conference, which also includes an NMR Symposium and instrument exhibit. The International EPR Symposium covers all aspects of EPR spectroscopy, and contributions in all areas are invited.

This year there will be sessions emphasizing the wide range of frequencies at which EPR is now performed including, for example, in vivo experiments at 250 MHz and high-field EPR. The National High Magnetic Field Laboratory in Tallahassee will join us in sponsoring the high-field sessions. There also will be a special session on industrial applications of EPR organized by ReefMorse (reef@xenon.che.ilstu.edu). Lectures and posters will be scheduled from Monday am (July 30th) through Thursday noon (August 2th).

We invite you to participate in the EPR Symposium. Researchers are encouraged to present unpublished results and tentative conclusions to stimulate discussion. We suggest that you consider presentations in the poster sessions, which have proven to be an excellent forum for exchange of ideas. The book of abstracts for the Rocky Mountain Conference will be prepared electronically (see <http://www.milestoneshow.com/rmcac> for instructions). In addition to the electronic submission, please send two hard copies of your abstract directly to us for use in preparing the preliminary program.

The deadline for abstract submission is March 31, 2001. We hope that you will be able to come to the 2001 EPR Symposium. As it becomes available, updated information on the conference, including the preliminary program, will be posted on our web page:

(<http://www.du.edu/~seaton/eprsym.html>).

Sunday, July 29th, Bruker Instruments will sponsor a tutorial workshop at the University of Denver, which will be

followed by an open house at the University of Denver EPR labs. Lunch will be provided by Bruker Instruments and transportation for each event will be provided to and from the Marriott Hotel. Details will be available at <http://www.du.edu/~seaton/workshop.html>. Please inform Dr. Arthur Heiss (ah@bruker.com or fax: 978-670-8851) if you will attend. Contact for information: Profs. Gareth and Sandra Eaton, Department of Chemistry and Biochemistry, University of Denver, 80208 USA, 303-871-3102, seaton@du.edu.

JOINT SYMPOSIUM ON BIO-SENSING AND BIO-IMAGING (Pre-Symposium of ICAS 2001), Yamagata Tetsu, Yamagata, Japan, August 2-4, 2001

[NEW ANNOUNCEMENT]

The symposium is focused on bio-imaging, bio-sensing and related scientific advancement. It will be held in celebration of the founding of the second stage of The Institute for Life Support Technology, and Fifth-year Anniversary of Graduate Program of Human Sensing and Function Sensor Engineering, Yamagata University, in conjunction with Second International Workshop on Single-Cell Molecular Technology.

Contact:

For Registration, Hotel and Travel Inquiries:

JSBB Secretariat, Yamashin Travel Service Co., LTD,
c/o Yamashin Hoso Kaikan Bldg.

2-5-12 Hatago-machi, Yamagata-shi 990-0047, Japan
Tel: +81-23-623-3926; Fax: +81-23-623-2649

E-mail: kaihatsu@travel-ysk.co.jp

For General Information and Scientific Activities:

JSBB Managing Director

Shoichi Ito, Mr., Inst. for Life Support Technology

2-2-1, Matsuei, Yamagata-shi 990-2473, Japan

Tel and Fax: (+81)-23-674-3130

E-mail: sho.ito@yat.ymgt-techno.or.jp

<http://www.ymgt-techno.or.jp/JSBB/>

INTERNATIONAL SOCIETY of MAGNETIC RESONANCE (ISMAR), Rodos Palace Hotel, Rhodes, Greece, August 19-24, 2001.

[REVISED LOCATION AND SUBMISSION DATE]

The next meeting of the International Society of Magnetic Resonance (ISMAR) will take place on the island of Rhodes. This conference marks the 30th anniversary of the founding of the ISMAR and its first meeting, which took place in Israel in 1971. In the tradition of the ISMAR conferences, the meeting will provide a forum for physicists, chemists and biologists interested in NMR and ESR spectroscopy and imaging, and their applications to natural sciences and medicine. Deadline for abstracts: April 2, 2001.

Gil Navon, Chair; Zeev Luz & Daniella Goldfarb, Co-Chairs.

Web page: <http://www.tau.ac.il/chemistry/ISMAR.html>

(Hotel Web page: <http://www.rodos-palace.gr/>)

10th INTERNATIONAL CONFERENCE on BIOINORGANIC CHEMISTRY, Convention Center, Florence, Italy, August 26 - 31, 2001

[PREVIOUSLY ANNOUNCED IN NEWSLETTER]

This conference will cover many topics of interest to the EPR community. Full details appear on the following Web site:

Details: <http://www.cerm.unifi.it/icbic/icbic10.html>

Contact: ICBIC10 Secretariat, CERM & Dept. of Chemistry, University of Florence, Via Luigi Sacconi, 6 50019, Sesto Fiorentino (FI)- Italy.
Fax: +39 055 4209 253; **e-mail:** icbic10@cerm.unifi.it.

WORKSHOP on EPR STUDIES of VIABLE BIOLOGICAL SYSTEMS, (especially *in vivo*) and RELATED TECHNIQUES (especially oximetry), September 8-13, 2001, Dartmouth Medical School, Hanover, New Hampshire. [PREVIOUSLY ANNOUNCED IN NEWSLETTER] For details, visit the Web site:

<http://www.dartmouth.edu/~eprctr/workshop2001>

3rd INTERNATIONAL CONFERENCE ON OXYGEN/NITROGEN RADICALS: CELL INJURY AND DISEASE, Lakeview Scanticon Resort and Conference Center, Morgantown, West Virginia, USA, September 16-19, 2001. [NEW ANNOUNCEMENT]

Oral and poster presentations in seven categories will encompass a wide number of critical current research issues. Conference Proceedings will be published in Environmental Health Perspectives

See the Web site for details, including deadlines, abstract instructions, and list of invited speakers to date:

<http://www.wvmd.wvu.edu/cme/cmescched.htm>.

Conference Chair: Val Vallyathan, CDC/NIOSH, 1095 Willowdale Road, m/s 2015, Morgantown, WV 26505, **E-mail:** vav1@cdc.gov; **Co-Chair:** Xianglin Shi, CDC/NIOSH, Morgantown, WV, USA

CONFERENCE ON "FREE RADICALS, ANTIOXIDANTS AND HUMAN DISEASES," Smolensk, Russia, September 19-22, 2001

[NEW ANNOUNCEMENT]

We are inviting you to take part in a scientific-practical conference with international participation to be held in September 2001 in Smolensk.

Main Themes:

1. Biochemical and biophysical methods of control on Bioradicals process (magnetic radiospectroscopy-EPR, chemiluminescence). 2. The role of free radicals (active forms of oxygen, nitric oxide) and antioxidants in adaptation process, pathogenesis and sanogenesis of diseases. 3. Physical factors influence on free radicals process in human organism. 4. Antioxidant vitamins, food and biologically active additions, their place in preventive and ecological medicine.

Such a conference, held in Smolensk in 1999, attracted attention of a wide range of different specialization clinicians (cardiologists, pulmonologists, gastroenterologists, psychiatrists, surgeons and others), biologists, biophysicists, chemists engaged in control on free radical processes and use of fundamental research in medical practice.

Location: Smolensk is an ancient Russian city situated on seven hills on the picturesque bank of the Dnieper. A variety of places of interest and well developed hotel network make it attractive for tourists and for holding scientific forums.

Information: Contact the General Secretary of the

conference: D.M., Prof. Vera Podoprigrorova, Department of Internal Medicine, Smolensk State Medical Academy, 28, Tenisheva Str., Smolensk, 214019, Russia. Fax: 8-0812-558114; Tel. (8-0812)55-72-22 or (8-08122)3-94-94. E-mail: dnmax@globus.smolensk.ru

For participation in the conference we ask you to complete and return the Application Form in good time. (The deadline for forms and theses of reports is April 15, 2001 latest.) We plan to publish the materials on the above mentioned topics.

Registration fees = \$200; For invited participants=\$100.

Initiative committee: Asisova, O.A.-D.B.Sc.(Institute of Physical and Chemical Medicine DHR), Vanin, A.F.-D.B.Sc., Prof.(Institute of Chemical Physics ASr), Vladimirov, Y.A.-Academician of AMScR, (Co-Chairman), (State Medical University of Russia), Volodin, N.N.-Head of Educational Medical Institutions and Staff Politics Depart. of DHR, Ivashkin, V.T.-D.M.Sc., Prof., Academician of AMScR (Moscow Medical Academy), Kirillov, Y.A.-Head of Organization and Scientific Research Examination Depart. of DHR, Lazebnik, L.B.-D.M.Sc., Prof. (Russian State University of Postgraduate Education), Lopukhin, Y.M.-Academician of AMScR, Pleshkov, V.G.-D.M.Sc., Prof. (Rector of Smolensk Medical Academy), Sergiyenko, V.I.-D.M.Sc. (Institute of Physic and Chemical Medicine, DMA), Smirnov, L.D.-D.Ch.Sc., Prof. (Institute of Biochemical Physics ASr), Tkachenko, S.B.-Head of Administration of Research Medical Institutions of DHR, Yavorsky, A.N.-D.M.Sc. Prof. (Examination and State Control Scientific Centre on Medicines).

Contact: dnmax@sci.smolensk.ru

3RD INTERNATIONAL CONFERENCE on NITROXIDE RADICALS "SPIN: SYNTHESIS, PROPERTIES and IMPLICATIONS of NITROXIDES," University of Kaiserslautern, Germany, Sept. 24-26, 2001. [PREVIOUSLY ANNOUNCED IN NEWSLETTER]

Details: For further information on this meeting, contact Prof. Dr. Wolfgang E. Trommer, Fachbereich Chemie, Universität Kaiserslautern, Postfach 3049, D-67653 Kaiserslautern, Germany; ☎: 49-631-205-2045; Fax: 49-631-205-3419; e-mail: trommer@chemie.uni-kl.de or visit the web page:

<http://iris1.chemie.uni-kl.de/spin2001.html>

FIFTH WORKSHOP on RECENT ADVANCES IN APPLICATIONS OF EPR IN BIOLOGY AND MEDICINE, Kraków, Poland, September 29 – October 3, 2001 [PREVIOUSLY ANNOUNCED IN NEWSLETTER]

Location: the Ravens Conference Hall, located in the heart of the Kraków Old City – Rynek Główny. The workshop is organized under the auspices of the Vice-Rector of the Jagiellonian University and supported by the Fifth Framework Programme of the European Union, State Committee for Scientific Research and MCW Free Radical Research Center in Milwaukee. It will mark the 600 year anniversary of the rebirth of the Jagiellonian University and dedication of the Institute of Molecular Biology New Building.

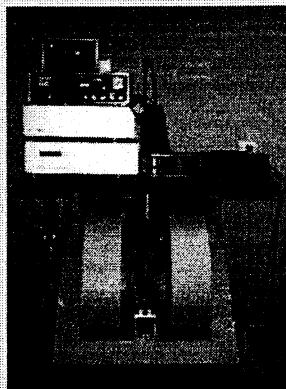
Coverage: Key aspects of EPR research in biology, medicine, and biotechnology with particular emphasis on role of oxidants in free radical processes, protection by antioxidants, structural biology, *in vivo* EPR spectroscopy, and EPR spin

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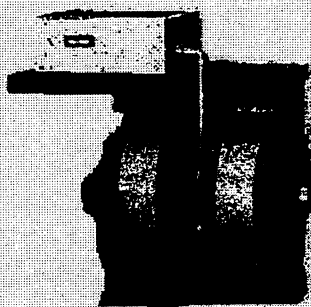
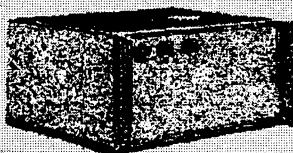
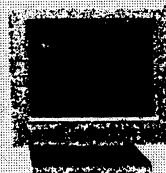
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We invite you to participate in this exciting scientific event that, as traditional, will include an attractive social and cultural program. **We expect to fund up to ten young investigators (\$500) to attend the meeting. Details will be on the web site: <http://www.mol.uj.edu.pl/eprworkshop>.** (case-sensitive!)

Chair of the International Scientific Committee: Prof. Balaraman Kalyanaraman; Chair of the Organizing Committee: Prof. Tadeusz Sarna..

For more information, email to: epr.workshop@mol.uj.edu.pl

INTERNATIONAL SYMPOSIUM on NEW STRATEGY of ESR DOSIMETRY and DATING, Osaka University, Toyonaka, Osaka, Japan October 25-27, 2001. [NEW ANNOUNCEMENT]

Electron spin resonance (ESR) dating, radiation dosimetry, and imaging have progressed remarkably in the last two decades. We think it a good occasion to summarize the quarter century of ESR dating and half a century of ESR dosimetry, especially after the book *New Applications of Electron Spin Resonance-Dating, Dosimetry and Microscopy* (World Scientific, Singapore, 1994), and discuss the strategy at the start of the 21st century to stimulate our fields.

The 3rd Asia-Pacific EPR symposium will be hosted by Dr. Kawamori at Kansei Gakuin University and will be held at Kobe University from October 29-November 1, 2001. There is a session on ESR dosimetry and earth science applications. Hence, if you could participate in this Symposium or if you had a chance to come to Japan, it is good to attend a satellite EPR dosimetry symposium meeting organized by ESR Applied Metrology Workshop in Osaka.

Background: The First International Symposium on ESR Dating including dosimetry was held in 1985 at Ube-Akiyoshi and supported by Technical College of Yamaguchi University under the auspices of the Ministry of Education, Japan. The second and fourth was at GFS, Germany, the third at NIS, USA and the fourth, Russia. There were requests that the fifth should be held at Osaka University: the sixth is scheduled at Denver, Colorado, USA with the emphasis on biodosimetry. The Japanese Workshop of ESR Applied Metrology, in which researchers of optical dating are also participating, will host the symposium by inviting a small number of young researchers and students from abroad. The selection will be made from the quality of the submitted abstract. However, the budget is extremely tight. We are not sure whether we can get any support from agencies at the time of drastic changes of the university system in Japan. Hence, participants are requested to apply for their travel grant and stipends from their own countries in principle. We will do our best to help excellent researchers having financial limitations.

Abstract Prize: which covers the full or partial travel expenses to present the work in Osaka. We have decided not to have a big formal International Symposium, but to have an open forum to highlight ESR dosimetry and applications to interdisciplinary fields. This should be an informal, scientifically pleasant and stimulating, get-togetherness type two and half days symposium before the 3rd Asia Pacific EPR/ESR Symposium. The session of the ESR dating and dosimetry in the Asia Pacific Symposium will be arranged for your convenience.

In order to reduce our time and cost, we do not attempt to collect many participants by campaigning on a large scale. The announcement and the first circular will be sent by e-mails to colleagues in this field, but will not be printed to save our labor, costs, and natural resources in the age of internet. We are happy if you could send an e-mail announcement to your friends who are interested in this symposium. Please send us your response on the possibility of your participation to esrdd@ess.sci.osaka-u.ac.jp

Scope: Technical details of ESR dating, dosimetry and some imaging and their noble applications are the main subjects in this symposium. Most works on optical dating will be presented in poster sessions, but major works especially done with ESR will be presented in the oral session. New approaches for identification of irradiated foodstuffs by EPR.

Main topics:

- 1) Tokai JCO, Chernobyl accidents and A-bomb radiation: Special lecture on JCO accident and its dosimetry, Chernobyl, Semipalachinsk, etc.
- 2) Radiation effects of minerals and basic studies on waste depository in sediments: What ESR and optical methods can do to assess the safety of radioactive waste.
- 3) ESR and optical dating in geosciences toward 21st century: Summary of ESR & Optical dating in geosciences in 20th century and new prospects.
- 4) ESR and optical dating and dosimetry in planetary sciences: Dosimetry in space missions for astronauts and noble methods in planetary material survey
- 5) ESR imaging and new spectrometers with applications from semiconductors to fossils: Review of ESR imaging hardware and their applications for interdisciplinary studies
- 6) New materials for ESR dosimeters and for food irradiation monitoring: Tissue equivalent alkali-organic acids compounds for dosimeter and new methods of monitoring.

Deadlines: For application for abstract prize: July 15, 2001
For submission of abstracts: August 31, 2001

We recommend you participate in the Asia-Pacific in which some general review talks on ESR dosimetry and dating are also scheduled. If you are interested in participating in this symposium and the 3rd Pacific EPR Symposium, please let us know by reply e-mail, specifying as follows:

"I will attend () **only** the 2001 ESR Dating and Dosimetry Symposium."

or "I will attend () **both** Asia Pacific EPR/ESR and Osaka symposium."

We will post the schedules in our home page on this ESRDD-2001. Please watch the changes of the schedule. If we get the grant from the Ministry of Education, we might have the conference in the Conference Hall of main campus (Suita, Osaka) rather than in Toyonaka Campus, both are easy to access by a monorail from the domestic airport-Itami-. Shuttle buses are available every 15-20 minutes from the Kansai International Airport. Details will be announced to those who notify us they are interested in attending ESRDD-2001.

Organization: Motoji Ikeya, President; Dr. Chihiro Yamanaka, Chief Secretary; Dr. Makoto Hirai, Secretary & Presentation; Dr. Atsushi Tani, Secretary & Treasurer; Yasuko Miyamaru,

Contact Address: Akane Nishida, Secretary 2001 International Symposium on ESR Dosimetry and Dating

(Oct.25-27, 2001) Society of ESR Applied Metrology,
Department of Earth and Space Science, Osaka University 1-1
Machikaneyama, Toyonaka, Osaka 560-0043, Japan.
Phone:+81-(06)6850-5490, 5492; fax:+81-(06)6850-5540

Email: esrdd@ess.sci.osaka-u.ac.jp

WWW: <http://pumice.ess.sci.osaka-u.ac.jp/esrdd/>

**THIRD ASIA-PACIFIC EPR/ESR SYMPOSIUM
(APES'01), Kobe University, Kobe, Japan, 29 October to 1
November, 2001.**



[REVISED DATES/ ANNOUNCEMENT]

On behalf of the International
Organizing Committee (IOC), the Local
Organizing Committee (LOC) extends a
cordial invitation to participate in the third Asia-Pacific
EPR/ESR Symposium (APES'01) which will take place at Kobe
University "Shindai Kaikan" in Kobe, Japan from October 29
(Monday) to November 1 (Thursday), 2001. The Symposium,
although aimed primarily at the Asia-Pacific countries, will be
open to participants from all over the world.

On this occasion of the beginning of the 21st century, the
organizer aims to develop new directions of EPR/ESR. The
former symposia brought about great strides of EPR/ESR
through stimulation by participants all over the world.
Applications to biological and environmental sciences are the
focus of current issues among the diverse topics of EPR/ESR. In
the APES'01, new parallel sessions on high-field/high-frequency
EPR as one of the modern and important techniques of EPR will
be added. For further developments of EPR/ESR the symposium
should be broadly based and any idea of contributions and
suggestions would be appreciated.

We intend to make the symposium an extremely successful
international forum and we look forwards to welcoming you.
Asako Kawamori, Chairperson

SCIENTIFIC PROGRAMME, SYMPOSIA

Scientific Contributions— Contributions will be
categorized either as invited papers for plenary sessions (45 min)
and for parallel sessions (35 min), or for topical parallel oral
presentation sessions (20 min) or poster sessions (two hours). As
oral presentations are limited in time, poster presentations will be
recommended for plural topics contributed by one research
group.

Language— The official language of the Symposium is
English. No facilities for translation will be available.

Scope— Nine parallel topical sessions encompassing the
following fields are planned:

- (1) Biology and Life Sciences.
- (2) Medical Sciences
- (3) Geology and EPR Dosimetry
- (4) Chemical Reactions and Environmental Sciences
- (5) Material Sciences
- (6) Physics and Magnetism
- (7) New Developments and Cross Disciplinary Area
- (8) High Frequency EPR: Theory and Magnetism
- (9) High Frequency EPR: Applications

A Tentative Time Table of Schedules--

Participants are expected to arrive at Kobe in the afternoon
of Sunday, October 28 for registration and the Welcoming Mixer
in the evening at Takigawa Kaikan.

COMMITTEES

International Organizing Committee

President: Prof. C.Z. Rudowicz (Hong Kong)

Vice President: Prof. A. Kawamori (Japan)

Members: Prof. A. Ziatdnov (Russia), Prof. H. So (South
Korea), Prof. Y. Li (China), Prof. H. Ohta (Japan), Dr. Y.Y.
Yeueng (Hong Kong), Dr. T.T. Nguyen (Vietnam), Prof. S.V.
Bhat (India), Dr. G. Hanson (Australia).

International Advisory Members

Prof. Lawrence J. Berliner, Ohio State Univ. (USA); Prof.
Maniac, Osaka Univ. (Japan); Prof. Arnold J. Hoff, State Univ.
of Leiden (The Netherlands); Prof. C.A.J. Ammerlaan, Univ. of
Amsterdam (The Netherlands).

Local Organizing Committee

Chairperson: Prof. Asako Kawamori (Kwansei Gakuin Univ.)

Secretary: General: Prof. Hitoshi Ohta (Kobe Univ.)

Treasurer: Prof. Takeji Takui (Osaka City Univ.)

Members: Prof. Hiroaki Ohya (Institute for Life Support
Technology of Yamagata Technopolis Foundation); Prof. Jun
Yamauchi (Kyoto Univ.); Prof. Motoji Ikeya (Osaka Univ.)

Local Advisory Members

Keiji Kuwata, Emeritus Prof. (Osaka Univ.); Hiroshi Watari,
Emeritus Prof. (National Inst. of Physiology); Noboru Hirota,
Emeritus Prof. (Kyoto Univ.)

Scientific Program Committee

Prof. Jun Yamauchi (Kyoto Univ.); Prof. Mitsuhiro Motokawa
(Tohoku Univ.); Prof. Shozo Tero (Tohoku Univ.); Prof.
Hiroshi Hori (Osaka Univ.); Prof. Chihiro Yamanaka (Osaka
Univ.); Prof. Hideo Utsumi (Kyusyu Univ.); Dr. Tetsuhiko
Yoshimura (Institute for Life Support Technology of Yamagata
Technopolis Foundation).

Co-Sponsored by the Physical Society of Japan, Chemical
Society of Japan, Biophysical Society of Japan and The Japanese
Society of Plant Physiologists

PLENARY LECTURES.

Invited papers— Approximately 10 papers are scheduled in
the plenary lectures and 16 papers in the invited lectures in the
parallel sessions. The following plenary contributions have been
confirmed:

Czeslaw Z. Rudowicz, City Univ. of Hong Kong (Hong
Kong) "Electron Magnetic Resonance (EMR) of the Spin $S \geq 1$
systems: an Overview of Major Pitfalls Awaiting Unwary
Spectroscopists"; Jack H. Freed, Cornell Univ. (USA) "Modern
ESR Methods in The Study of Proteins and Membranes",
Alexander A. Romanyukha, National Institute of Standards and
Technology, (USA) "EPR Dose Reconstruction in Teeth.
Examples of Application, Problems and Perspectives"; Larry
Kevan, Univ. of Houston (USA) "Pulsed Electron Magnetic
Resonance of Transition Metal Ions in Microporous and
Mesoporous Oxide Materials"; Shin-ichi Kuroda, Nagoya Univ.
(Japan) "ESR and ENDOR Spectroscopy of Solitons and
Polarons in Conjugated Polymers"; Martyn C. Simons, De
Montfort Univ. (England) "Trapped & Solvated Electrons";
Zhong-Li Liu, Lanzhou Univ. (China) "Kinetic EPR Study on
Vitamin E Radical in Membranes"; Masaki Oshikawa, Tokyo
Institute of Technology (Japan) "Recent Developments in
Low-Temperature ESR in Quantum Antiferromagnetic Chains";
Lawrence J. Berliner, Ohio State Univ. (USA) "Advances in the
Spin Labeling Method"; Tetsuhiko Yoshimura, Institute for Life
Support Technology (Japan) "In vivo and ex vivo EPR

Spectroscopy and Imaging of Endogenously Synthesized Nitric Oxide under Physiological Pathophysiological Conditions

Invited speakers – in parallel sessions; tentative category.

(1) Sergei A. Dzuba: (Russia), (1) Yang Liu: (China), (2) D.J. Lurie: (England), (2) Rafik G. Saifutdinov: (Russia), (2) Hideo Utsumi: (Japan), (3) Rainer Grun: (Australia), (3) B. Jagannadha Reddy: (India), (4) Elio Giamello: (Italy), (4) Wolfgang Lubitz: (Germany), (5) Rana Janardan Singh: (India), (6) J. Pilbrow (Australia), (7) Yuri Tsvetkov: (Russia), (7) Sandra. Eaton (USA), (7) A.J. Hoff: (The Netherlands), (8) Seiji Miyashita: (Japan), (9) C.A.J. Ammerlaan: (The Netherlands)

Posters—An exhibition of equipments, materials and books related to EPR/ESR and other electron magnetic resonance (EMR) techniques will be exhibited in the part of Symposium. Companies and organizations interested in participating in the exhibition are requested to contact Prof. H. Ohta, the Secretary General

CALL FOR PAPERS

Abstract submission— For all categories of papers an abstract must be prepared according to the format on the sample abstract included in this Announcement. Abstracts of contributed papers will be reviewed for classification by the Scientific program sub-committee. In the case of mail delays, abstracts may provisionally be sent by e-mail as an attachment (micro-word version). Abstracts for all contributions must be received by April 30, 2001. Abstract should be submitted in triplicate (one camera-ready original and two copies). Authors will be notified on acceptance, field category and oral or poster presentation by June 30, 2001. A Book of Abstracts will be distributed to all participants upon registration. Abstracts should be sent to Prof. Jun Yamauchi: Graduate School of Human and Environmental Studies, Kyoto Univ., Kyoto 606-8501, JAPAN

E-mail: yamauchi@fermi.jinkan.kyoto-u.ac.jp

Proceedings— Camera-ready manuscripts of the papers submitted to the Symposium will be published. As a guideline a plenary or invited paper will be 8-12 pages in length, a contributed paper 3-6 pages for oral or poster presentation. Manuscripts (original and two copies) are due on the first day of the Symposium, October 29, 2001. Papers will be refereed shortly after the Symposium with the help of external reviewers if necessary. Proceedings will be published in Proceedings volume, a copy of which is included in the normal registration fee. Instructions for preparing manuscripts will be sent together with the notification on paper acceptance.

GENERAL INFORMATION

Kobe Univ. is located on the hillside of the Rokko Mountain area of Kobe city and also close to the seashore of Osaka Bay. Kobe Univ. has a modern and unfettered atmosphere accentuated by rich greenery. The climate in October is usually pleasant in the daytime (~20°C); the temperature usually drops to 12°C in the night. A jacket will be recommended. The electricity supply in Japan is mostly 100 AC volts (60 Hz in Western Japan). The official currency of Japan is the Japanese Yen. The exchange rate is about 1 US\$=114 Yen in December, 2000. Banking hours are 9.00 to 15.00, Monday through Friday except national holidays.

Passport and Visa: Entry into Japan— Participants are advised to determine their own requirements. All overseas nationals require a valid passport. Please contact the Japanese embassy or consulate in your country to verify if you need a visa.

If you need an official letter of personal invitation for the visa application, please contact the secretary general whose address is shown below. This procedure, however, is to assist participants for a visa issue or permission to attend the conference and is not an official invitation covering fees or any other expenses. : Prof. Hitoshi Ohta: Department of Physics, Faculty of Science, Kobe Univ., 1-1 Rokkodai, Nada, Kobe 657-8501, Japan. **E-mail:** ohta@phys.sci.kobe-u.ac.jp

Insurance— Since registration fees do not cover insurance of any kind, please be advised that insurance is the responsibility of individual participants.

REGISTRATION

The registration form should be sent to the Secretariat for the APES'01 (NIPPON TRAVEL AGENCY CO., LTD. KOBE SALES OFFICE) written on the registration form by air mail or faxed to +81-78-391-4622. The deadline for advanced registration with reduced rate is July 31, 2001.

The registration fee is in the following. To encourage the people from Asian countries and Russia (excluding Japanese) we offer a reduction of the registration fee. All full-time students are also eligible for the reduction.

Registration fees:

	<u>Before July 31, 2001</u>	<u>After August 1, 2001</u>
Normal fee	38,000 Yen	42,000 Yen
Red. fee (Asia & Russia)	32,000 Yen	36,000 Yen
Student fee	19,000 Yen	22,000 Yen
Accompanying person	14,000 Yen	6,000 Yen

Normal fee (Japan, Pacific, European, United States and Canada) and Reduced fee for Asian countries and Russia include admission to all scientific sessions, exhibition, the Symposium folder with the Book of Abstracts, the volume of Proceedings and Symposium Banquet. Excursion fee for Oct. 31 is not included.

Student fee: The students must supply a letter for certificate described by their supervisor or the head of institution together with the registration form. Student fee includes the same contents as above except for the Symposium Banquet. All students are cordially invited to the Symposium Banquet, costing an additional fee of 5,000 Yen.

Accompanying person's fee includes Welcome Reception, Excursion and Banquet on Oct. 31. The excursion route on Oct. 31 will be in the following. Kobe Univ., Minatogawa Shrine, Kobe Bay Cruising, Banquet.

Those who wish to attend the excursion, should pay the excursion fee according to the registration form; it is included in the accompanying person's fee.)

Financial support— Some funds will be available for young scientists and scientists from Asian countries and Russia to attend the APES'01. The deadline for applications is March 31, 2001. For the financial support, please send a letter of recommendation by their supervisor or the head of their institution together with a copy of the abstract to the Symposium Treasurer of the Local Organizing Committee. The application should be accompanied by a curriculum vitae containing applicant's name, status (post graduate student, post doctoral researcher, or present position), affiliation, field of study, full contact address, e-mail, and telephone/fax numbers. In the applicant's letter, please describe reasons for the financial support and show full details of the estimated costs to attend APES'01. The reply to the request will be notified by June 31, 2001. Please be ready for the receipts of

each expense to receive the refunds at the conference desk.

The applicant's letter for requesting the support should be addressed to the Symposium Treasurer:

Prof. Takeji Takui: Department of Chemistry, Graduate School of Science, Osaka City Univ., Sumiyoshi-ku Osaka 558-8585, JAPAN.

E-mail: takui@sci.osaka-cu.ac.jp

Further information and General inquiries:

To Chairperson, Prof. Asako Kawamori: Faculty of Science, Kwansei Gakuin Univ., Uegahara 1-1-155, Nishinomiya 662-8501, JAPAN

E-mail: kawamori@kwansei.ac.jp

To Secretary General, Prof. Hitoshi Ohta: Department of Physics, Faculty of Science, Kobe Univ., 1-1 Rokkodai, Nada, Kobe 657-8501 JAPAN

E-mail: ohta@phys.sci.kobe-u.ac.jp

Web: <http://www.apes2001.phys.sci.kobe-u.ac.jp/>

16th EUROPEAN EXPERIMENTAL NUCLEAR MAGNETIC RESONANCE CONFERENCE, PRAGUE, Czech Republic, June 10 -15, 2002.

[NEW ANNOUNCEMENT]

The conference homepage with the pertinent information regarding EENC-2002 will be available March 2001 on the address: <http://www.icpf.cas.cz/eenc2002>.

On behalf of the organizing committee, J. Schraml

10th INTERNATIONAL CONFERENCE ON "LUMINESCENCE AND ELECTRON SPIN RESONANCE DATING," University of Nevada-Reno, Reno, Nevada, U.S.A., 24-28 June 2002.

[NEW ANNOUNCEMENT]

The Desert Research Institute invites you to the 10th International Conference on Luminescence and Electron Spin Resonance Dating (LED 2002). LED 2002 continues the series begun in 1978 in Oxford, U.K., and follows LED99 (Rome, 1999), and LED96 (Canberra, 1996).

LED 2002 will bring together experts from around the world in the field of trapped-electron dating (luminescence and electron spin resonance dating). The topics range from novel and original applications to the dating of heated and unheated Quaternary geological/geomorphological and archeological materials, through fundamental studies of the basic physical phenomena and related dosimetry, to advances in equipment technology. A few invited lectures will introduce the main topics. Both oral and poster presentations are planned.

GENERAL INFORMATION

Participants and Authors: Persons interested in attending should fill out and return by Email the Reply-Card (on web site below). All replies to this First Announcement should be made before February 1, 2001. This early return is essential to permit the planning of reservations of facilities and other logistical matters. There is no guarantee that late replies will be considered in this planning process. A second Email announcement will be sent by mid 2001, and a final Email announcement will be sent by Dec. 2001. All interested persons can access information at the conference WEB site.

Location: The conference will be held on the campus of the

Univ. of Nevada-Reno (UNR), located in the city of Reno, Nevada. Weather and climate information, as well as geographical, recreational and cultural information can be obtained at the Conference WEB address after early 2001.

Reno is served by a modern and capacious airport, with direct (brief) flights to major U.S.A. west-coast cities (San Diego, Los Angeles, San Francisco, Portland, Seattle), and to several other U.S.A. cities, thereby facilitating convenient U.S.A. and international connecting flights. Reno is also about a 5-hour drive from the San Francisco area.

Conference Fees: Professionals, US\$ 500; Students, US\$ 270; Accompanying persons, (Réception, excursion, lunches and conference dinner) US\$ 170. These fees will increase by at least 10% for late registrations. Registration deadlines will be stated in later announcements.

Proceedings: Proceedings of both oral and poster presentations may be eligible for peer-reviewed publication in the journals Quaternary Geochronology (QSR) and Radiation Measurements. The official language of the conference and proceedings is English.

Accommodations: Participants will be responsible for their own room reservation. A block of 125 hotel rooms has been reserved at the Circus Circus Hotel-Casino, about 5 blocks from the conference site. The special conference (LED 2002) rate is very economical at about US\$40/room (single or double occupancy), and additional persons can share for an extra fee. The rooms are complete, self-contained with modern facilities. Please note that at least one person in each of these rooms must be 21 years or older. Visit the Circus-Circus WEB site for detailed information, and specify LED 2002 when making Email, telephone or FAX inquiries and reservations.

Attendance Assistance: We plan to obtain financial assistance from sponsors to provide a limited number of Conference-fee grants for qualified overseas students and U.S.A. students from outside of Nevada, who cannot obtain funding from their own laboratories/institutes/agencies.

Scientific Organizing Committee: Glenn Berger (Chair), Desert Research Institute; James Bischoff, U.S. Geological Survey; Rainer Grön, Australian National University; Michel Lamothe, University du Quebec, Montreal; Steve McKeever, University of Oklahoma; Jack Rink, McMaster University; Ann Wintle, University of Wales.

Conference Secretary: Ms. M. Jones, Division of Hydrological Sciences, Desert Research Institute, 2215 Raggio Parkway, Reno, NV 89512-1095, USA.

Email: LED2002@dri.edu, Website:

<http://www.dri.edu/DEES/LED2002/led2002-home.html>

7th INTERNATIONAL SYMPOSIUM ON SPIN TRAPPING, SPIN TRAPS, NITROXIDES AND NITRIC OXIDE, SPECTROSCOPY, CHEMISTRY AND FREE RADICAL BIOLOGY, The Carolina Inn, Chapel Hill, North Carolina, USA, July 7-11, 2002.

[NEW ANNOUNCEMENT]

Continued strong interest in free-radical aspects of physical and organic chemistry, biochemistry, pharmacology, toxicology and medicine, as exemplified by the recent meeting in Marseille, France, has prompted us to begin organizing the next meeting in 2002. The 7th International Symposium will again bring together

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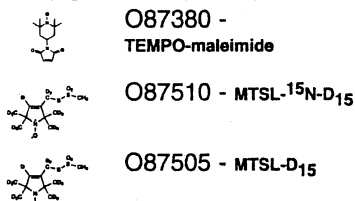
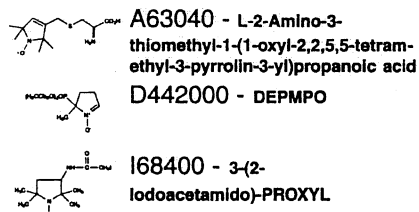
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researchers with different backgrounds interested in the detection of low levels of free radicals and related subjects. Thirty oral presentations will be chosen from the abstracts submitted. Participation by younger researchers will be encouraged by travel awards, and a one-day workshop on spin-trapping principles and techniques will be held.

Tentative topics: *Chemistry and Biology of Nitroxides, Synthesis and Reactions of Novel Spin Traps, Cellular Spin Trapping, Nitric Oxide Detection, In Vivo Spin Trapping, Nitron and Nitroxide Drugs*

Scientific Committee: Ronald Mason (RTP, USA), Colin Chignell (RTP, USA), Maria Kadiiska (RTP, USA), Yang Fann (RTP, USA), Ohara Augusto (Sao Paulo, Brazil), Michael Davies (Sydney, Australia), Chris Rowlands (Cardiff, UK), Paul Tordo (Marseille, France), Raman Kalyanaraman (Milwaukee, Wisconsin), Harold Swartz (Hanover, New Hampshire), Aldo Tomasi (Modena, Italy), Toshikazu Yoshikawa (Kyoto, Japan) and Igor Grigor'ev (Novosibirsk, Russia).

Location: The meeting will be held at The Carolina Inn, a historical hotel located on the campus of The University of North Carolina at Chapel Hill. Over 200 years ago, a small Episcopal chapel called New Hope Chapel on the Hill stood at a crossroads near the future site of the nation's first state university. The town of Chapel Hill derived its name from that church in the woods. Among those who have enjoyed the Carolina Inn's hospitality are some of the country's most prominent figures, including Eleanor Roosevelt, Rose Kennedy, Jimmy Carter, Thomas Wolfe, Eudora Welty, Gloria Steinem, Margaret Truman, Frank Sinatra, Bob Hope, Yogi Berra and Jack Nicklaus.

Contact: Ms. Barbara Morse, Laboratory of Pharmacology and Chemistry, NIEHS/NIH, P.O. Box 12233, MD F1-03, Research Triangle Park, NC 27709, USA. Fax: (919) 541-5737; E-mail: morse@niehs.nih.gov, World Wide Web: <http://epr.niehs.nih.gov/spintrapping2002>

POSITIONS AVAILABLE & WANTED

EPR RESEARCH SCIENTIST POSITION OPEN AT THE UNIVERSITY OF NEW MEXICO

An EPR research scientist position is available immediately at the University of New Mexico Health Sciences Center (UNMHSC) to investigate the role of free radicals in brain injury during cerebral ischemia and reperfusion, as well as to coordinate the various research activities at the UNMHSC EPR facility. The EPR facility has a range of capabilities, including conventional X-band, in vivo EPR spectroscopy at L-band, and in vivo EPR imaging of small animals. Individuals with extensive background in EPR spectroscopy and/or EPR imaging, as well as experience in the application of EPR to biomedical research, are invited to apply. The applicants should have a Ph.D. with a minimum of two years postdoctoral experience. Please send curriculum vitae to: Dr. Jim Liu, University of New Mexico, College of Pharmacy, Albuquerque, NM 87131, USA. E-mail: jliu@unm.edu The University of New Mexico is an Equal Opportunity and Affirmative Action employer and educator.

GRADUATE STUDENT OR POSTDOC POSITION AVAILABLE at NIJMEGEN FOR PHYSICIST or PHYSICAL CHEMIST FOR A PROJECT ON SOLID-STATE NMR USING MICRO COILS

The Nijmegen SON Research (NSR) center and the Research Institute for Materials (RIM) are research schools based at the University of Nijmegen, The Netherlands. The objective of the collaborating schools is to design and synthesize new functional materials and study their structure and properties. NMR plays an important role in this research.

Within the Physical Chemistry department / HF-NMR facility there is an opening for a graduate student (4 years) or a Postdoc (2.5 years) to develop solid-state NMR using MICRO COILS at high magnetic fields. The position is supported by a grant from the Dutch Foundation for Fundamental Research on Matter (FOM) and Philips Research Laboratories. In this project, in collaboration with the Philips Research Laboratories and the MESA Institute of the University of Twente, high-frequency NMR detectors will be developed based on MICRO COILS (m scale). To optimize sensitivity, integration of rf-detection and pre-amplification is necessary. After implementation in regular NMR setups, it is aimed to apply these detectors at high magnetic fields up to 30 T, well beyond the strength of "conventional" NMR magnets. In this way a significant increase in the sensitivity and applicability should be obtained. Emphasis will be on the application of the detectors in materials science, e.g., in studying the molecular behavior of self-organizing nano-materials and the detection of quadrupolar nuclei in various functional materials.

The NMR center has excellent solid-state NMR facilities, including Chemagnetics CMX Infinity 300, 400 and 600 MHz spectrometers and a home-built 180 MHz spectrometer (www-solmr.sci.kun.nl/solmr/home.html). Access to a Varian Inova 800 will be realized in the course of this year. Furthermore there will be access to the magnets of the high magnet field laboratory.

Requirements: For this position we are looking for an enthusiastic researcher with a Master's or PhD degree in physics or physical chemistry, with a strong affinity for electronics development, who likes to work in an internationally oriented environment.

Further Information: Contact Prof. Dr. A.P.M. Kentgens (e-mail arno@solidmr.kun.nl / phone +31-24-3652078). Written applications, including curriculum vitae, summary of research interest and experience, should be directed to: Prof. Dr. A.P.M. Kentgens, Dept. of Physical Chemistry / solid-state NMR, NSR Center, Toernooiveld 1, 6525 ED Nijmegen, The Netherlands

POSTDOC POSITIONS AVAILABLE WITH THE NIEHS/NIH FREE RADICAL METABOLITE GROUP

One or more post-doctoral positions in the biological ESR group are open immediately with a salary of \$28,000 or more depending on experience. Health insurance is included. Studies of protein-derived tyrosyl and tryptophanyl radicals and of nitric oxide in humans are currently active. In vitro and in vivo investigations of free radical metabolites of toxic chemicals and drugs are also active. Individuals with a

background in ESR or immunology are invited to apply. The applicant must have a Ph.D, or MD with less than five years of previous postdoctoral experience. Please send curriculum vitae to: Dr. Ronald P. Mason, Laboratory of Pharmacology and Chemistry, NIEHS/NIH, P.O. Box 12233, MD F0-01 Research Triangle Park, NC 27709, US.

SEVERAL EPR-RELATED POSTDOCTORAL POSITIONS AVAILABLE IN EUROPEAN UNION

In the 4th framework programme of an EU-funded Training and Mobility of Research (TMR) network, we offer 4 or more Post-doctoral or Ph. D. fellowships in a concerted effort to understand structure-function relationships of non-heme iron proteins, mainly methane monooxygenase (MMO) and ribonucleotide reductase R2 protein (RNR-R2) with (m-oxo or m-hydroxo bridged di-iron clusters) and small models. The postdocs will investigate the mechanism of industrially important oxygenation reactions carried out by the iron-oxygen proteins and small inorganic models with dioxygen and hydrogen peroxide. We will mimic the reactions of the iron cluster of the enzyme MMO from methanotrophic bacteria in RNR-R2 using molecular biology, spectroscopic (including EPR), kinetic, and crystallographic techniques. For information including projects, groups, candidate qualifications, and how to apply, see network home-pages at <http://www.uio.no/~kkan/EUTMR.htm> and <http://improving-rtn.sti.jrc.it/network>; click on "Life Sciences" and then "Dioxygen reactions of iron-oxygen proteins". The network will end 30 September 2002. Positions are available immediately in Nov 2000.

POSTDOCTORAL POSITION and/or JOB WANTED

I am looking for a post-doctoral position or a job in the area of EPR spectroscopy applied to crystallography, geology, and material sciences. My Ph.D work has concentrated on the X-band and W-band EPR study of Gd^{3+} centres in single-crystal and powder fluorapatite. The major contributions of my thesis are site assignments, substitution mechanisms, and site symmetries of the two distinct Gd^{3+} centres we discovered in fluorapatite. I am quite expert in EPR spectral analysis, e.g. spin-hamiltonian optimization, simulation [energy levels, angular dependence of the resonance magnetic field (roadmap), single-crystal and powder spectra (line shape, line position, and site splitting)], and pseudo-symmetry analysis. I have an interdisciplinary background, i.e., four-year experience in EPR, four-year experience as a lab instructor and teaching assistant in crystallography, mineralogy and optical mineralogy, ten-year experience in remote sensing. I received a 1996-00 University of Saskatchewan Graduate Scholarship (Ph.D) and a 2000-01 Graduate Fellowship from this university. I have a M.Sc degree in photoelectrical technology and remote sensing, as well as a B.Sc degree in infrared optics. I have five papers published, one in review, and one or more evolving. I am analytical, methodical and hard working and have good communication skills in English and Mandarin. I will be available in the spring of 2001. Please contact me at: Mr. Ning Chen, 201-105 Cumberland Ave. S., Saskatoon, SK, Canada, S7N 1L7; Phone: (306)374-9378; e-mail: nic882@mail.usask.ca.

BOOKS and JOURNALS

SPIN LABELING I & II (Editor, L.J. Berliner). The Illinois EPR Research Center and Larry Berliner have secured from the original publishers assignment of copyright and authority to duplicate and distribute these wonderful classics. These books are out of print, but we have produced copies on durable high-quality acid-free paper and will sell them. Both volumes are bound together as one book, which opens landscape fashion. To keep the cost down, we have bound them with soft covers and plastic comb backs. The entire price will be US\$60 to anyone who picks up a copy here. Including prepaid express shipping (a week or less transit time to most places), the price will be US\$70 shipped anywhere in the United States and US\$85 shipped to a major city outside the United States. There is an extra cost of US\$10 for delivery to other than major cities outside the USA. Please contact Linn Belford in the IERC (rbelford@uiuc.edu) or check the IERC Web site (<http://ierc.scs.uiuc.edu>) for details.

Journal "APPLIED MAGNETIC RESONANCE" SPECIAL RATE FOR IES MEMBERS. Springer offers a special AMR subscription rate for the members of the EPR(ESR) Society. It is US\$166.00 plus US\$56.00 postage. This means a discount of 85%! Orders must be sent directly to Springer-Verlag Wien, Editorial Department, Sachsenplatz 4-6, A-1200 Wien, Austria (FAX; +43 1 330 24 46 65 or e-mail: silvia.schilgerius@springer.at).

PRINCIPLES OF PULSE ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY (Authors: Arthur Schweiger, ETH, Zurich, Switzerland, and Gunnar Jeschke, Max-Planck Institute for Polymer Research, Mainz, Germany). 672 pages, 40 halftones, 250 line figures. Published by Oxford University Press; UK Price: £ 95.00. Information on this new book will be published in Volume 12 of the EPR Newsletter.

EQUIPMENT & SUPPLIES EXCHANGE

EPR INSTRUMENT WANTED

We are searching for an EPR instrument in good working condition with variable temperature attachments.

Contact Dr. Horia Caldararu, Romanian Academy, Institute of Physical Chemistry "I.G. Murgulescu," 77208 Bucharest, Romania, FAX: 40-1-3121147; E-mail: hcaldararu@chimfiz.icf.ro or hcaldararu@pcnet.pcnet.ro.

WANTED: VARIAN X-BAND CAVITY

Varian multipurpose dual or single X-band cavity (E 231 type or equivalent), wanted.

Contact : Dr. Pavel Cevc, Josef Stefan Institute, Jamova 39, Ljubljana, Slovenia, fax .+ 386 61 126 3269, E-mail : Pavel.Cevc@ijs.si

AVAILABLE: NITROXIDE RADICALS

A small collection of fairly well-preserved unique nitroxide radicals synthesized by Dr. L.A. Myshkina in the 1980's is now being made available:

- 2,6-bis(N-oxylo-tetramethyltetrahydropyrid-4-yl) thyophene.
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- 2,6-dimethylenecyclohexanone substituted by 6-(N-oxylo-tetramethyltetrahydropyrid-4-yl) thyen-2-yl residues at both alpha-carbon atoms.
- 4-chloro-4-nitro-TMP-N-oxy.

Small quantities of the following compounds are also available: • 4-bromo-4-nitro-TMP-N-oxy and • 1,4-di-TMP-butaine-bis-N-oxy.

For information about obtaining any of the above compounds, contact: A.E. Myshkin, Inst. Biochem. Phys., Russian Acad. Sci., Kosygin St. 4, 117977 Moscow V-344, Russia; NEW E-mail: Myshkin@photonics.ru

AVAILABLE: ISOTOPE-CONTAINING SPIN PROBES

A wide assortment of special ^{15}N - and/or ^2H -containing spin probes is available at moderate prices. For a catalog and price list of available compounds, contact Prof. Igor Grigor'ev, Inst. of Organic Chemistry, Novosibirsk 630090 Russia; E-mail: maxx@nioch.nsc.ru. In the US, contact Sergei Dikanov, E-mail: dikanov@uiuc.edu

FOR SALE - NMR MAGNETOMETER

Sentec Model 1001, including 3 standard probes covering the range of 1 to 10 kG. In good working order, this 1981 model (uses NIM bin!) includes 7-digit display, 0.01 Gauss resolution, accuracy: 10⁻⁶ relative, 10⁻⁵ absolute, has automatic peak search feature, BCD output, etc. Can be bought with or without NIM bin and CRT display. Make an offer! Prof. E. J. Knystautas, Physics Dept., Univ. Laval, Quebec City (Quebec) G1K 7P4; ☎: 1-418-656-5569, FAX: 1-418-656-2040, E-mail: ejknyst@phy.ulaval.ca

WANTED: TERMINAL/MONITOR

Terminal/monitor for Bruker ECS 106 spectrometer wanted. Contact: Lon B. Knight, Jr., Furman University, Department of Chemistry, Greenville, SC 29613, USA; ☎: 1-864-294-3372; FAX: 1-864-294-3559; E-mail: lon.knight@furman.edu.

FOR SALE: VARIAN

Resonance Instruments has available:

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NEED HELP in DESIGN and CONSTRUCTION of EPR ELECTRONICS?

The University of Denver can supply electronic design and construction services for EPR applications. Low-noise pulse amplifiers, low-noise 100 KHz preamplifiers, boxcar integrators, and pulse timing systems are available. We also supply a conversion kit to convert Varian field control units to voltage-controlled scan operation. A 6 digit 1 ppm frequency counter is available in X-, C-, S- or L-band or Megahertz

versions. Complete microwave/RF bridges from 150 MHz to L-, S-, or C-band are available from designs previously built and tested at the University of Denver. Contact Richard W. Quine, ☎: 1-303-871-2419; E-mail: rquine@du.edu.

AVAILABLE: USED VARIAN EPR EQUIPMENT

1) Two Varian E-3's are now being refurbished. They will meet factory specifications and will come complete with a one-year warranty. The units may also include some upgrades.

2) Varian ENDOR accessory, with Varian ENDOR cavity.

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5) Varian E-272B field/frequency lock accessory.

Contact James Anderson, Research Specialties, 1030 S. Main St., Cedar Grove, WI 53013, USA; ☎/FAX: 1-920-668-9905.

FOR SALE: BRUKER ESP-300 RADIO-SPECTROMETER

The instrument is intended for investigation of materials by means of electronic paramagnetic resonance (EPR). It was purchased from Bruker Analytische Messtechnik GMBH by St. Petersburg quartz-glass factory "Stekvar" in 1989 and was installed in 1990 (tested in April 1990). But it was not used at all, because this research activity was later stopped at "Stekvar." The instrument was not moved and now is working completely, so it is like new.

This ESP-300 has maximum specifications (for example, there is a helium low-temperature additional device provided by Oxford Instruments) and is outfitted for for double and triple resonance. There are some spare parts. System # is ZD 698. The instrument's technical details are: 1) it works in X-band (frequency: 9.79 GHz); 2) spare cavities: ER 4111VT, ER 4114 HT, ER 4105 DR; 3) NMR magnetometer is ER 035 M with ESR in cavity probe; 4) microwave bridge is ER 044 MRDH; 5) temperature range from 3.5 K (Oxford Instruments helium low temperature unit); 6) double & triple resonance system.

For further information, contact Prof. Roman Eismont, E-mail: empire@peterlink.ru; ☎: 7-812-249-02-95; FAX: 7-812-249-51-14; Regular mail: 6 Shafirovsky Avenue, St. Petersburg 195273 Russia.

FOR SALE: VARIAN ESR-9

Our research group has an EPR spectrometer, Varian ESR-9, in working order, to spare. Conditions for transfer can be discussed. Contact Prof. Astrid Gräslund c/o Torbjörn Astlind e-mail torbjorn@biophys.su.se, Dept. of Biophysics, Stockholm University, Sweden.

WANTED: MONITOR FOR an ESP 380E SPECTROMETER

We need a new or used Monitor for our ESP 380E ESR spectrometer. The compatible models are: Mitsubishi model FA3415ETKL and EIZO model 9060S.

Please contact Prof. Nicholas J. Turro:
3000 Broadway, Mail Code 3119, Columbia University,
New York, New York 10027.

FAX: 212-932-1289, Phone: 212-854-2175.

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