August 1997

39th Rocky Mountain Conference on Analytical Chemistry

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PRELIMINARY PROGRAM AND REGISTRATION INFORMATION

A U G U S T 3-7, 1997

HYATT REGENCY DENVER
1750 WELTON STREET
DENVER, COLORADO

SPONSORED BY:

ROCKY MOUNTAIN SECTION
SOCIETY FOR APPLIED SPECTROSCOPY
&
COLORADO SECTION
AMERICAN CHEMICAL SOCIETY
### SYMPOSIA SCHEDULE

<table>
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<tr>
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<th>8/4/97</th>
<th>8/5/97</th>
<th>8/6/97</th>
<th>8/7/97</th>
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<td>MONDAY</td>
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### SHORT COURSE SCHEDULE

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### VENDOR WORKSHOP SCHEDULE

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<td>THERMO JARRELL ASH</td>
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### UPCOMING CONFERENCE DATES

- July 25- August 1, 1998  Hyatt Regency Denver
- August 1-5, 1999     Hyatt Regency Denver

### CONFERENCE LOCATION

Technical sessions and the exhibition for the 39th Rocky Mountain Conference on Analytical Chemistry will be held in the Hyatt Regency Denver Hotel, 1750 Welton Street, Denver, Colorado 80202.
SYMPOSIA ORGANIZERS

ATOMIC SPECTROSCOPY
Gary Rayson
New Mexico State University
Department of Chemistry
Las Cruces, NM 88003
(505) 646-5839 fax: (505) 646-2649

RADIOCHEMISTRY
Ann Mullin
USGS NWQL
5293 Ward Road
Arvada, CO 80002
(303) 467-8235 fax: (303) 467-8240

ELECTROCHEMISTRY
Carl Koval
University of Colorado
Department of Chemistry
Boulder, CO 80309
(303) 492-5564

ENVIRONMENTAL CHEMISTRY
Maria Tikkanen
Assoc. of California Water Agencies
910 "K" Street, Suite 250
Sacramento, CA 95814
(916) 441-4545 fax: (916) 441-7893

LUMINESCENCE
DeLyle Eastwood
AF Institute of Technology
Dept. of Engineering Physics
2950 P St.
Wright Patterson AFB, OH 45433
(937) 255-3636 x 4537 fax (937) 255-2921
Robert Hurtubise
University of Wyoming
Department of Chemistry
Box 3838 University Station
Laramie, WY 82071
(307) 766-6241 fax: (307) 766-2807

COMPOSTING
Cal Kuska
8547 E. Arapahoe Rd. J221
Greenwood Village, CO 80112
(303) 791-8639 fax: (303) 850-0623
Robert Wershaw
U.S. Geological Survey
MS408, 5293 Ward Road
Arvada, CO 80002
(303) 467-8280 fax: (303) 467-8240

MASS SPECTROMETRY
Joseph Zirnoll
Hauser Laboratories
5555 Airport Road
Boulder CO 80301
(303) 443-4662 fax (303) 441-5803

NMR
James Yesinowski
Naval Research Lab, Code 6120
Washington, DC 20375
(202) 767-0415 fax: (202) 767-0594

PHARMACEUTICAL ANALYSIS
Mike Cutrera
Bio-Pharm Inc.
425 Delaware Dr
Ft. Washington, PA 19034
(215) 646-1226 fax (215) 646-6509
Robert Lantz
Rocky Mountain Instrumental Labs
456 South Link Lane
Ft. Collins, CO 80524
(303) 530-1169 fax: (303) 530-1169

EPR
Gareth Eaton
University of Denver
Department of Chemistry
Denver, CO 80208
(303) 871-2980 fax: (303) 871-2254
Sandra Eaton
University of Denver
Department of Chemistry
Denver, CO 80208
(303) 871-3102 fax: (303) 871-2254

FTIR/NIR/RAMAN SPECTROSCOPY
Abdul Chughtai
University of Denver
Department of Chemistry
Denver, CO 80208
(303) 871-4404 fax: (303) 871-2932
Dwight Smith
University of Denver
Department of Chemistry
Denver, CO 80208
(303) 871-2938 fax: (303) 871-2932

GENERAL POSTERS
Mary Cast
National Water Quality Lab
U.S.G.S.
5293 Ward Road
Arvada, CO 80002
(303) 467-8135 fax: (303) 431-8331

ICP-MS
Howard Taylor
USGS
3215 Marine Street
Boulder, CO 80303
(303) 541-3007 fax: (303) 447-2505

QUALITY ASSURANCE
Carl Craig
Sievers Instruments
6185 Arapahoe St.
Boulder, CO 80303
(303) 444-2009 fax: (303) 444-9543
ORGANIZERS OF THE 39TH ROCKY MOUNTAIN CONFERENCE

CONFERENCE CHAIRMAN
Glenda Brown
U.S. Geological Survey
National Water Quality Laboratory
5293 Ward Road
Arvada, CO 80002
(303) 467-8122 fax (303)431 -8331

PROGRAM CHAIRMAN
Steven Hughes
Technology Experts, LLC
4450 Arapahoe St. Suite 100
Boulder, CO 80303
(303)415-2073 fax (303)415-2500

REGISTRATION
Barb Coles
Hauser Laboratories
5555 Airport Rd.
Boulder, CO 80301
(303) 443-4662 x 1090 fax(303)441-5803

EXHIBITS AND VENDOR WORKSHOPS
Sue Zeller
Huffman Laboratories, Inc.
4630 Indiana St.
Golden, CO 80403
(303) 278-4455 fax: (303) 278-7012

PUBLICITY
Pat Sulik
Rocky Mountain Instrumental Labs
456 S. Link Lane
Ft. Collins, CO 80524
(303) 530-1169 fax: (303) 530-1169

TREASURER
Carol Gies
14723 Mariposa Ct.
Broomfield, CO 80020
(303) 277-2931

SOCIAL EVENTS
Donn Johnson
Hauser Laboratories
5555 Airport Rd.
Boulder, CO 80301
(303) 443-4662 x1077 fax(303) 441 -5803

AUDIO-VISUAL
Colleen Gupta
U.S. Geological Survey
National Water Quality Laboratory
5293 Ward Road.
Arvada, CO 80002
(303) 467-8147 fax: (303) 431-8331

REGISTRATION

Admission to all technical sessions, vendor sponsored users groups and the exhibition is by the name badge for the 39th Rocky Mountain Conference. Pre-registration, using the form at the back of this program, is encouraged. The deadline for the receipt of the pre-registration form and full remittance of the conference fees is July 1, 1997. Conference fees are payable by check (denominated in $US, only drawn on a U.S. Bank) made payable to the Rocky Mountain Conference. Visa and Mastercard are accepted, as well.

REGISTRATION FEES -1997

<table>
<thead>
<tr>
<th></th>
<th>Preregistration</th>
<th>On Site</th>
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<tbody>
<tr>
<td>Regular (entire conference and exhibition)</td>
<td>$90.00</td>
<td>$110.00</td>
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<tr>
<td>One Day (specify day: M, T, W, R) includes exhibition</td>
<td>$50.00</td>
<td>$60.00</td>
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<tr>
<td>Retired / Unemployed</td>
<td>$30.00</td>
<td>$40.00</td>
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<tr>
<td>Full Time Student - Regular (includes exhibition)*</td>
<td>$30.00</td>
<td>$40.00</td>
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<tr>
<td>Student - One Day (specify day: M, T, W, R) includes exhibition*</td>
<td>$20.00</td>
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<td>Additional Vendor (beyond 3)</td>
<td>$45.00</td>
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<td>Exhibition Only (non-vendor)</td>
<td>$15.00</td>
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<td>Black Hawk Social Event</td>
<td>$5.00</td>
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<tr>
<td>Environmental Sampling Short Course</td>
<td>$150.00</td>
<td>$175.00</td>
</tr>
<tr>
<td>Basic Computer Operations and Management</td>
<td>$150.00</td>
<td>$175.00</td>
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</table>

*Legible copy of student ID must accompany registration form.

REFUNDS: Requests for refunds of conference fees must be received by July 15, 1997.

REGISTRATION TIMES

On-site registration for the 39th Rocky Mountain Conference will be held in the Imperial Ballroom Foyer of the Hyatt Regency Denver during the following hours:

- Sunday, August 3: 4:00 p.m. - 8:00 p.m.
- Monday, August 4: 7:30 a.m. - 3:30 p.m.
- Tuesday, August 5: 7:30 a.m. - 3:30 p.m.
- Wednesday, August 6: 7:30 a.m. - 3:30 p.m.
- Thursday, August 7: 8:00 a.m. - 12:00 p.m.
ROCKY MOUNTAIN CONFERENCE INFORMATION
(303) 843-9174
PO Box 506
Wheat Ridge, Colorado 80034
email: barb.coles@hauser.com

ACCOMMODATION FOR DISABILITIES

If you have a disability and may require accommodations in order to fully participate in this activity, please contact Glenda Brown (303-467-8122). We ask your cooperation in notifying us as soon as possible of your need for accommodation. While every effort will be made to meet attendees’ needs, we cannot guarantee the availability of accommodations in response to requests received after July 15, 1997.

SOCIAL PROGRAM AT THE HYATT REGENCY DENVER

SCHEDULE OF EVENTS

<table>
<thead>
<tr>
<th>Day</th>
<th>Event</th>
<th>Time</th>
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<tbody>
<tr>
<td>Sunday, August 3</td>
<td>Registration Mixer</td>
<td>4:00 p.m. - 8:00 p.m.</td>
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<tr>
<td>Monday, August 4</td>
<td>Exhibition</td>
<td>10:00 a.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>Monday, August 4</td>
<td>General Posters</td>
<td>3:00 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>Monday, August 4</td>
<td>Conference Reception</td>
<td>5:00 p.m. - 7:00 p.m.</td>
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<tr>
<td>Tuesday, August 5</td>
<td>Exhibition</td>
<td>9:00 a.m. - 5:00 p.m.</td>
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<tr>
<td>Tuesday, August 5</td>
<td>Black Hawk Excursion</td>
<td>6:00 p.m. - 11:30 p.m.</td>
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<tr>
<td>Wednesday, August</td>
<td>Exhibition</td>
<td>9:00 a.m. - 2:00 p.m.</td>
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REGISTRATION NIGHT MIXER

A cash bar will be open in the Imperial Ballroom Foyer of the Hyatt Regency Denver on Sunday evening, August 3, from 4:00 - 8:00 p.m. Plan to meet other conference attendees and beat the Monday rush to pick up your conference badge and final program.

CONFERENCE RECEPTION

On Monday evening, August 4, from 5:00 to 7:00 p.m., all attendees are cordially invited to join us for cocktails and hors d'oeuvres at the Hyatt Regency in the Imperial Ballroom. The exhibition will be open this evening and submissions from the General Poster session will be available for viewing. Enjoy music performed by last year's favorite, Blue Heaven.

BLACK HAWK EXCURSION

Head for the hills on Tuesday night! Join your friends in an evening excursion to the restored mining towns of Black Hawk and Central City. Buses will be provided from the Hyatt Regency Hotel, departing at 6:00 p.m., and returning at about 12:00 midnight. Enjoy your evening in these revitalized mining towns. Your $5.00 includes transportation each way and a discount on your dinner.
DIRECTIONS FROM DIA TO DOWNTOWN

Transportation is available from Denver International Airport (DIA) via bus, taxi, and private shuttle services. If you are driving, take Pena Boulevard to I-70 westbound. Follow I-70, then exit onto I-25 southbound. The 20th St. exit from I-25 will take you into downtown Denver, past Coors Field. The Hyatt Regency Hotel is located at 17th and Welton Streets in downtown.

HOTEL ACCOMMODATIONS

Hotel rooms at the Hyatt Regency Denver, 1750 Welton Street, Denver, Colorado 80202, (303) 295-1234, are available at the special discounted conference rate of $110 per night (single or double), plus applicable tax. Please identify yourself as a Rocky Mountain Conference attendee when making reservations to receive this discounted rate. Please see the Hyatt hotel reservation form in the back of this program for more information. Return this form directly to the hotel. The conference and associated social functions for the conference will be held at the Hyatt Regency Denver.

Reservations must be received by the hotel prior to July 11, 1997 and before the group reservations block is filled to assure your room accommodations. Reservations requested beyond the cut off date are subject to availability. Rooms may still be available after the cutoff date but not necessarily at the above rate. All reservations are subject to appropriate state, local, and room tax.

VISITOR INFORMATION

Contact the Guest Services in the main lobby of the Hyatt Regency Denver for suggestions about the large number of activities that are available in Denver and the surrounding area. For information about statewide attractions contact the Colorado Tourism Board, 1625 Broadway, Suite 1700, Denver, CO 80202, (303) 592-5510.

MESSAGE CENTER

Incoming telephone messages for conferees will be posted on the Conference Message Board, near the conference registration booth. The telephone number is (303) 295-1234. Indicate that the individual is attending the Rocky Mountain Conference so the message can be posted in the proper area.

RESTAURANT SERVICE

The Hyatt Regency Denver has an excellent restaurant in the hotel. In addition, Guest Services in the main lobby has sample menus and suggestions for casual to elegant dining experiences throughout the Denver area.

JOIN THE ROCKY MOUNTAIN CONFERENCE

The Rocky Mountain Conference Organizing Committee is looking for volunteers! We are looking for additional Symposium Chairpersons and organizing committee staff. Money is available to support new symposia for start-up costs. Please contact Glenda Brown (303) 467-8122 or Steven Hughes (303) 415-2073 if you are interested in helping make a great conference even better.
**SHORT COURSES**

(Sponsored by the 39th Rocky Mountain Conference)

**Environmental Sampling to Meet Regulatory Compliance**

August 6, 1997

**Fee:** $150 preregistration  $175 on-site  
**Faculty:** John R. Dick and Steven K. Hughes

The course presents sample management techniques for environmental and/or regulatory compliance sampling. The exploration of this topic shows six major areas to be discussed. In Project Planning: Sample and Analysis plans DQO Development, Lab Selection, Laboratory Contracting, and Costs will be investigated. The pros and cons of field sampling by the client or a subcontractor will come to light in Sample Collection. In Laboratory Analysis the importance of Audits, Standard Operating Procedures and Method Selection will be shown. The pitfalls in Sample Transportation will cover: RAD Screening On-site, Packaging, Shipping, Return of Unused Samples, and Lab-Generated Waste. The section on Receipt of Analytical Data will guide you step by step through Data Verification, Data Validation and Data Quality Assessment. The final section on Record Management and Reporting demonstrates "the job is not complete until the paperwork is done." The overall philosophy of the course is to allow you to control quality and spend the least amount of time and money on your sampling and analysis.

**Basic Computer Operations and Management**

August 7, 1997

**Fee:** $150 preregistration  $175 on-site  
**Faculty:** Steven K Hughes and Richard Archambeau

Alternate course title: *What to do until the computer repair person arrives!!* This course addresses the importance of understanding the hardware in your computer. Beginning with a fundamental discussion of the functions and practices that are essential to the operation of your computer, the course will expand to cover items such as basic hardware, internal architecture, trouble shooting, minor repairs, parts replacement, and system upgrades. An in-depth description covering the importance of regular backups and how to make this as painless as possible is presented. Attendees will learn how to develop better computer practices essential to improved performance.

**For short course information contact:**

<table>
<thead>
<tr>
<th>John R. Dick, PhD</th>
<th>Steven K. Hughes, PhD</th>
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<tbody>
<tr>
<td>Technology Experts. LLC</td>
<td>Technology Experts. LLC</td>
</tr>
<tr>
<td>4450 Arapahoe Ave Suite 100</td>
<td>4450 Arapahoe Ave Suite 100</td>
</tr>
<tr>
<td>Boulder, CO 80301</td>
<td>Boulder, CO 80301</td>
</tr>
<tr>
<td>Tel: (303) 415-2073</td>
<td>Tel: (303) 415-2073</td>
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<tr>
<td>Fax: (303) 415-2500</td>
<td>FAX: (303) 415-2500</td>
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EXHIBITORS FOR THE 1997 ROCKY MOUNTAIN CONFERENCE

Exhibit Hours:
Monday 10:00 a.m. to 5:00 p.m.
Tuesday 9:00 a.m. to 5:00 p.m.
Wednesday 9:00 a.m. to 2:00 p.m.

The following exhibitors will be in attendance,
(as of May 1, 1997)

Allen Scientific Glass, Inc.
Analytical Instrument Recycle, Inc.
American Chemical Society, Colorado Section
Bruker Instruments, Inc.
Chemcheck Inc.
Doty Scientific, Inc.
High Purity Standards
JEOL USA, Inc.
Nicolet Instrument Corporation
Millipore Corporation
Otsuka Electronics USA, Inc.
Oxford Instruments, Inc.
Oxford Nuclear Measurements Division
Perkin-Elmer Corporation
Questran Corporation
Resonance Technologies, Inc.
Society of Applied Spectroscopy, Colorado Section
Tecmag, Inc.
Thermo Jarrell Ash
Update Instrument, Inc.
VG Elemental
Varian Associates, Inc.
Waters Corporation
Wilmad Glass
Whatman, Inc.

VENDOR WORKSHOPS

Bruker Instruments, Inc.
Sixth Annual Rocky Mountain Conference Workshop on Solid State NMR

Bruker Instruments will host a workshop dedicated to solid state NMR on Sunday, August 3, 1997 at the Hyatt Regency Hotel. New developments and products from Bruker will be presented, along with experimental results presented by users of Bruker instrumentation. All NMR spectroscopists with an interest in solids are encouraged to attend, regardless of whether they are familiar with Bruker Instruments or not. This should be an excellent opportunity to find out more about the current capabilities and future directions of Bruker in solids, and also for you to share your ideas on what you would like to see us offer in the future.

If you plan to attend, or would like more information, please contact Doug Burum at (508) 667-9580 ext. 120.

Varian Associates
Varian NMR Instruments 6th Solid State Users Conference

Varian Solids Systems' Users are invited to a users' conference on Sunday, August 3, 1997. The conference program will consist of presentations from both Varian personnel and Varian spectrometer users. Varian
applications scientists, R&D engineers, and sales representatives will be present at this half day conference. This is an excellent opportunity for long-time Varian customers to gather for an afternoon of stimulating scientific interaction, which will then adjourn for an evening of dining as guests of Varian.

For registration material please call Ms. Bee Sehrt in Palo Alto, CA at (415) 424-4526. Please indicate if you wish to make a presentation. For other information regarding this conference please contact Iain Green at (314) 726-5862.

**Waters Chromatography**
**LC/MS Seminar**

Waters Corporation will present a seminar on the benefits and uses of liquid chromatography / mass spectrometry analysis. The seminar will focus on the fundamentals of such techniques as electrospray, atmospheric pressure chemical ionization (APCI), and electron impact (EI).

The advantages and range of use of each technique will be explored. This seminar will be valuable to the chromatographer currently using LC/MS, or, to the chromatographer considering adding LC/MS to the lab.

This seminar will be held Wednesday afternoon, August 6, 1997 from 1 to 4 p.m. To make reservations, contact Denise Kent at (800) 252-4752 ext. 6987.

**Dionex Corporation**
**Industrial Applications of Ion Chromatography**
**Accelerated Solvent Extraction (ASE)**

Free Seminar and Training Workshop
Wednesday, August 1997
9:00 a.m. - 4:00 p.m.

Learn about the latest applications in Ion Chromatography for:
- Chemicals and Petrochemicals (brines, acids, bases, salts, amines, metals)
- Electronics and Device Extracts (ionic contamination, solvents, chemicals)
- Plating (brighteners, levelers, additives)
- Process Monitoring
- Dealing with Complex Matrices
- Trace level analysis

Learn about the recent additions to the Accelerated Solvent Extractor (ASE) and the newest industrial and environmental applications for ASE.

After lunch, (provided) attend a training workshop on:
- Pumps
- Conductivity Detectors
- Columns and Suppressors

To register, contact Lee Ramirez at (303) 771-2129 or fax your name, company, address and phone number to (303) 771-0840.

**Thermo Jarrell Ash Corporation**
**What's New and Exciting with TJA?!!**

This half day seminar is entitled “What’s new and exciting with TJA?!!” Software...Hardware...Allware!! All AA and ICP users are welcome to attend this morning session. The seminar is free and includes lunch. See you there!

To make reservations, please contact David Anderson at (303) 690-4366 or FAX at (303) 690-5934 or E-Mail at danderson@Thermo-optek.com.
Chemagnetics NMR
A Division of Otsuka Electronics USA Inc.
8th Annual Solid-State NMR Spectroscopy Workshop

Dates: Friday, August 8th and Saturday, August 9th
Locations: Thursday evening until Saturday morning:
The Elkhorn Lodge, Estes Park, Colorado
Saturday:
Otsuka Electronics USA Inc. Factory
2607 Midpoint Drive, Ste. A
Fort Collins, Colorado

This will be an informal workshop in a beautiful mountain setting. Friday includes a number of speakers, informal discussions, a mixer and dinner at the Elkhorn Lodge. Saturday will include a day of lab work on various solids NMR techniques at the Otsuka Electronics headquarters in Fort Collins. Transportation from Denver to Estes Park, and to Fort Collins from Estes Park will be provided by Otsuka. There is no fee to attend the workshops, however local accommodations and meals are the attendee’s expense. Space is limited, so please respond as soon as possible.

For further information contact: Dr. Jim Frye
Tel: 970-484-0428
Fax: 970-484-0487
email: jimf@chemagnetics.com

To register:
On-line registration: www.chemagnetics.com

Or
Complete the form below and return it to the following address prior to Friday, July 11th:
Pam Jarrett
2607 Midpoint Drive, Ste. A
Fort Collins, CO 80525

Or, respond by email to: pjarrett@chemagnetics.com
(Please include name, organization, address, telephone, fax and email address)

Date:

Please register me for this summer’s Advanced Solid-State NMR Workshop:
Name:
Phone:
FAX:
Organization:
Address:
Tuesday, August 5, 1997
Session I, Howard E. Taylor, Presiding

9:00 Introduction, H.E. Taylor
9:10 Remarks, R.K. Skogerboe
9:45 ANALYSIS OF ROCKS BY ICP-MS, F.E. Lichte and A.L. Meier, U.S. Geological Survey, Denver, CO.
10:10 THE INTERNAL STANDARD METHOD FOR ICP-MS CALIBRATION, G.W. Johnson, Matheson Gas Products, Longmont, CO.
10:35 Break
11:00 USE OF ISOPOTE DILUTION INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY TO DETERMINE MERCURY IN ENVIRONMENTAL SAMPLES, D.A. Roth and H.E. Taylor, U.S. Geological Survey, Boulder, CO.
11:25 HIGH-PRECISION U/38U DISEQUILIBRIUM MEASUREMENTS IN NATURAL WATERS AND CARBONATES BY ICP-MS, M.E. Ketterer, C.J. Khourey and G. Matisoff, John Carroll University, University Heights, OH.
12:15 PICORAGRAM/L AND SUBPICORAGRAM/L DETECTION LIMITS FOR ACTINIDES WITH ICP-MS, M.K. Donais, S. Nelms, P. Shaw, J. Godfrey and F. Keenan, VG Elemental, Franklin, MA.

Session II, Gary Rayson, Presiding

1:45 A NEW LOOK AT DIRECT CURRENT PLASMA SPECTROMETRY, G.N. Coleman, D. Miller and R. Starek, Thermo-Jarrell Ash, Franklin, MA.
2:10 A NEW CELL DESIGN FOR A RADIO FREQUENCY GLOW DISCHARGE ION SOURCE FOR GC/MS, M Belkin and J. A. Caruso, University of Cincinnati, Cincinnati, OH.
2:35 COMPARISON OF AXIAL VERSUS RADIAL INDUCTIVELY COUPLED PLASMA ANALYSIS, M. Cole, Varian, Sugarland, TX.
3:00 SPATIALLY AND TEMPORALLY RESOLVED SPECTRA OF SINGLE SHOT LASER INDUCED PLASMAS, I. Schechter, Technion-Israel Institute of Technology, Haifa, Israel.
3:25 Break
4:00 DIRECT ELEMENTAL ANALYSIS OF INORGANIC NANOCLUSTERS IN ORGANIC SOLVENTS USING GRAPHITE FURNACE AA, J.P. Wilcoxon, B. Hance, D. Stall and W. Chambers, Sandia National Laboratories, Albuquerque, NM.
4:25 ATOMIC ABSORPTION IN AN INDUCTIVELY COUPLED PLASMA USING AN OPTICAL SPATIAL IMAGE DISPERSION SYSTEM: ANALYTICAL FIGURES OF MERIT, G.D. Rayson and C.E. Hensman, New Mexico State University, Las Cruces, NM.
4:50 INNOVATIONS IN FLAME ATOMIC ABSORPTION SPECTROMETRY, D. Shrader, J. Sanders, J. Moffett and B. Frary, Varian, Chicago, IL.
5:15 COMPUTER SIMULATIONS OF GAS PHASE SPECIES WITHIN A GRAPHITE FURNACE ATOMIZER: IMPACT OF MATRIX COMPOSITION, G.D. Rayson and K. Sae-tueng, New Mexico State University, Las Cruces, NM.

SYMPOSIUM ON COMPOSTING AND SUSTAINABLE AGRICULTURE
Organized by Cal Kuska and Robert L. Wershaw
Composting Papers Have Been Included In The General Poster Session
Monday, August 4, 1997

**Morning Session**

**8.30**  EFFECT OF ELECTROLYTE COMPOSITION ON ELECTRON TRANSFER KINETICS FOR FE(CN)$_6^{3-}$/4$^+$ AT DIAMOND-COATED GLASSY CARBON AND GRAPHITE. Qingyun Chen, Greg M. Swain, Utah State University, Logan, UT.

**8.55**  ELECTROCHEMISTRY AT NANOELECTRODE ENSEMBLES, Michelle L. Jacobson, Vinod P. Venon, Charles R. Martin, Colorado State University, Fort Collins, CO.

**9.20**  CHARGE TRANSFER KINETICS OF AQUEOUS AND ORGANIC REDOX ANALYTES AT CONDUCTIVE DIAMOND THIN FILMS, Michael C. Granger, Greg M. Swain, Utah State University, Logan, UT.


**10:10** Break

**10:30**  IMPEDANCE-BASED SOLUTION AND VAPOR PHASE SENSING BY THIN FILMS OF POLY(3,4-DIPHENYLIPYRROLE), Corey A. Salzer, C.Michael Elliott, Colorado State University, Fort Collins, CO.

**10:55**  AN ELECTROCHEMICAL ASSAY FOR DISSOLVED AZIDE USING BORON-DOPED DIAMOND ELECTRODES, Jishou Xu, Greg M. Swain, Utah State University, Logan, UT.

**11:20**  HUMIDITY-INDEPENDENT AMPEROMETRIC SENSOR FOR CARBON MONOXIDE BASED ON SOL-GEL CHEMISTRY, Mark E. Tess, James A. Cox, Miami University, Oxford, OH.

**Afternoon Session**

**1:30**  ELECTROCHEMICALLY MODULATED COMPLEXATION FOR THE SEPARATION OF GASES, Heather C. Oswald, Carl A. Koval, Richard D. Noble, University of Colorado, Boulder, CO.

**1:55**  DEPOSITION AND REDOX CYCLING OF Ni(OH)$_2$/Ni Films Deposited on Boron-Doped Diamonds Thin Film Electrodes, Ted E. Lister, Greg M. Swain, Utah State University, Logan, UT.

**2:20**  A CYCLIC VOLTAMMETRIC STUDY OF THE RATE CAPABILITY OF NANOFIBROUS V,O$_x$ LITHIUM-ION BATTERY ELECTRODES, Charles J. Patrissi, Charles R. Martin, Colorado State University, Fort Collins, CO.

**2:45**  ELECTROCHEMICAL INVESTIGATION OF SMALL BIOMOLECULES ENCAPSULATED BY SOL-GEL CHEMISTRY, James B. Laughlin, James A. Cox, Miami University of Ohio, Oxford, OH.

**3:10** Break

**3:30**  CHEMICAL VAPOR DEPOSITION (CVD) BASED SYNTHESIS OF TIS$_2$ MICROSTRUCTURES USING TEMPLATE METHOD FOR SECONDARY LITHIUM BATTERIES, Guangli Che, Ellen R. Fisher, Kshama Jirage, Charles R. Martin, Colorado State University, Fort Collins, CO.

**3:55**  APPLICATION OF DIAMOND-LIKE CARBON THIN FILMS FOR CORROSION PROTECTION OF ALUMINUM SURFACES, Guangyuan Li, Greg M. Swain, Utah State University, Logan, UT.

**4:20**  FABRICATION OF NANOTUBULAR MEMBRANES AND THEIR APPLICATION AS MOLECULAR FILTER, Kshams B. Jirage, Charles R. Martin, Colorado State University, Fort Collins, CO.

**Symposium on Environmental Chemistry**

Organized by Maria W. Tikkanen

Financial Support provided by Finnigan MAT

Monday, August 4, 1997

Morning Session: Maria W. Tikkanen, Presiding

**8:30**  Opening Remarks

**8:35**  INVITED SPEAKER IN ENVIRONMENTAL CHEMISTRY - THE ACCURATE DETERMINATION OF SPECIES BY SPECIATED ISOPTOE DILUTION MASS SPECTROMETRY: EXEMPLIFIED BY THE EVALUATION OF CR (VI) IN SOIL, H.M. "Skip" Kingston, Dengwei Huo, Yusheng Lu, Duquesne University, Department of Chemistry and Biochemistry and the Environmental Science Program, Pittsburgh, PA 15282.

**9:35**  INVESTIGATION OF URANIUM CONTAMINATION IN A GREA T LAKES HARBOR, Michael E. Ketterer, Department of Chemistry, John Carroll University, University Heights, OH 44118; Ricky L. Layman, Gerald Matossoff, Chris Bonniwell, and Peter McCall, Department of Geological Sciences, Case Western University, Cleveland, OH 44106.
DEVELOPMENT OF AN IMPROVED METHOD FOR THE DETERMINATION OF ARSENIC AT LOW LEVELS IN BIOLOGICAL MATRICES. Ruth Hund, American Water Works Association Research Foundation, 6666 W. Quincy Avenue, Denver, CO 80235, X. Chris Le, 13-103 Clinical Sciences Building, University of Alberta, Edmonton, AB T6G 2G3.

LANL CMR ORGANIC ANALYSIS CAPABILITIES FOR ENVIRONMENTAL APPLICATIONS. Gerald B. Ansell, Michael E. Cournoyer, Kirk W. Hollis, Anthony Lombardo, and Peter C. Stark, MS G740, LANL, Los Alamos, NM 87545-0000.

MTBE IN GROUNDWATER AND SURFACE WATERS IN CALIFORNIA. Maria W. Tikkanen, Association of California Water Agencies, 910 K Street, Sacramento, CA 95814; R.G. Sykes, East Bay Municipal Water District, 375 Eleventh St., Oakland, CA 94607-4240.

VOLATILE METALS RECOVERY USING A TEMPERATURE CONTROLLED OPEN VESSEL MICROWAVE SYSTEM. James C. Price, CEM Corporation, P.O. Box 200, Matthews, NC 28106-0200.

ARSENIC SPECIATION IN ENVIRONMENTAL SAMPLES USING A VG PLASMADQuad ICP-MS FOR ELEMENT-SPECIFIC DETECTION OF ION-PAIRING LC AND MICRO-LC SEPARATIONS. Mary Kate Donais, VG Elemental, 27 Forge Parkway, Franklin, MA 02038, Stephen E. Long National Institute of Standards and Technology, Gaithersburg, MD 20899.

Afternoon Session: Maria W. Tikkanen, Presiding

1:30 CONTAMINATED SEDIMENT REMEDIATION BY 'IN-SITU SAND CAPPING' IN HAMILTON HARBOUR, LAKE ONTARIO, CANADA. Fernando Rosa, National Water Research Institute, 867 Lakeshore Rd., Burlington, Ontario, Canada L7R 4A6.

THE USE OF MEDIA WITH HIGH DIELECTRIC CONSTANT FOR HAZARDOUS METAL ION SEPARATION. John D. Lamb and Alexander Y. Nazarenko, Department of Chemistry and Biochemistry, Brigham Young University, Provo, Utah 84602-5700.

CHEMICAL IMAGING FOR ENVIRONMENTAL ANALYSIS. Israel Schechter, Department of Chemistry, Technion - Israel Institute of Technology, Haifa 32 000, Israel.

HIGH THROUGHPUT MICROWAVE SAMPLE PREPARATION OF SULFIDE ORE SAMPLES FOR ANALYSIS BY ICAP. Sara Littau, Doug Ferguson, CEM Corporation, P.O. Box 200, Matthews, NC 28106.

Tuesday, August 5, 1997

Morning Session: Edward T. Furlong, Presiding

8:30 Opening Remarks

8:35 INVITED SPEAKER IN ENVIRONMENTAL MASS SPECTROMETRY

Sponsored by Finnigan MAT.

To be Announced

DEScribing non-constant variance-a model for estimating sampling and analysis precision with application to environmental measurements. Jeffrey W. Pritt, U.S. Geological Survey, 5293 Ward Road, Arvada, Colorado 80002.

DETERMINATION OF LIMIT OF QUANTIFICATION FOR HEXACHLOROBENZENE IN SELECTED PRODUCTS AND SAMPLES. Chung H. Chiu, Mylaine Tardif, Viera Balgava and Gary Poole, Environment Canada, 3439 River Road, Environmental Technology Centre, Ottawa, Ontario, Canada K1A 0H3.


11:15 To be announced

20™ INTERNATIONAL EPR SYMPOSIUM
Organized by Sandra S. Eaton and Gareth R. Eaton
Update information will be posted as it becomes available at http://www.du.edu/~seaton/eprsym.html
Financial Support provided by:
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Sunday, August 3, 1997 - Open House at the University of Denver
5:45 pm Meet in hotel lobby for bus transportation.
• Bruker will present a brief overview of highlights of their exhibit.
• A buffet supper will be provided, compliments of Bruker.
• There will be demonstrations and exhibits of our spectrometers.

Monday, August 4, 1997
Session I, W. Trommer presiding
8:30 Opening Remarks and Welcome, Gareth R. Eaton
9:45 PULSE EPR AND ENDOR STUDY OF CO(II) PORPHYRIN COMPLEXES, S. E. Van Doorslaer and A. Schweiger, ETH Zentrum, Switzerland.
10:05 Break
11:20 CROSS PEAK INTENSITIES IN DEUTERIUM TWO-DIMENSIONAL FOUR PULSE SPIN ECHO MODULATION SPECTRA, A. Poppl and R. M. Bottcher, Universitat Leipzig, Germany.
11:40 ESR CHARACTERIZATION OF THE FRAMEWORK LOCATION OF COBALT ION IN COAPO-41 AND COAPSO-41 MOLECULAR SIEVES, A. M. Prakash, M. Hartmann, and L. Kevan, University of Houston and Universitat Stuttgart, Germany.

Session II, M. K. Bowman, presiding
1:30 HIGH RESOLUTION EPR IMAGING USING NARROW LINE SPIN PROBES, H. J. Halpern, G. V. R. Chandramouli, E. D. Barth, and B. Sturgeon, University of Chicago.
Determination and Characterization of Nitric Oxide Generation in Mice by In Vivo L-Band EPR Spectroscopy, H. Fujii, J. Koscielniak, and L. J. Berliner, Ohio State University.


Molecular Motion and Chemistry in Zeolite Cages, J. D. Doetschman, D. C. Doetschman, J. D. Fox, G. D. Thomas, and D. W. Dwyer, SUNY-Binghamton and SUNY-Brockport.

Imidazoline Nitroxides as Probes for Local Chemical Environment: EPR Detection of Protons, Thiols, and Nitric Oxide, V. V. Khramtsov, Institute of Chemical Kinetics & Combustion, Russia.


Tuesday, August 5, 1997

Session III, L. Berliner presiding

Superoxide Formation from Endothelial Nitric Oxide Synthase: An ESR Spin-Trapping Investigation in a Loop-Gap Resonator, J. Vasquez-Vivar, P. Martasek, N. Hogg, K. A. Pritchard, Jr., and B. Kalyanaraman, Medical College of Wisconsin and University of Texas Health Science Center.

EPR Studies of Nitrosyl Species in Inflammation, J. K. Shergill, A. Inalsingh, M. N. Hughes, A. Bune, T. E. Cook, A. H. V. Schapira, and R. Cammack, King’s College London, U.K., St. Mary’s Hospital Medical School, U.K., and Free Hospital School of Medicine, U.K.


Bioreductioin of Tempone and Spin-Labeled Gentamicin by P. Aeruginosa Cells: Evaluation of the Rate Controlling Step and Effect of Ultrasound, N. Rapoport and A. Smirnov, University of Utah and University of Illinois.

Lipid-Protein Interaction in R-3-Hydroxybutyrate Dehydrogenase as Studied by ESR Spectroscopy, D. Chelius, J. Moeller, A. R. Marks, J. O. McIntyre, S. Fleischer, J. G. Wise, and W. E. Trommer, University of Kaiserslautern, Germany, Mount Sinai School of Medicine, and Vanderbilt University.

Session IV, L. Belford presiding

Time-Resolved EPR Studies of Hydrogen Abstraction From Sugars Including Cyclodextrins, M. G. Bakker and M. N. Lehmann, University of Alabama.

Multi-Photon Chemical Reactions, Chirality, and Vibronic Motions Studied by ESR, S. Shih, Yuan-Tze Institute of Technology, Taiwan.

Break

Session V, Posters, S. S. Eaton presiding

3:00 - 4:00 Authors Present for Posters Labeled A
4:00 - 5:00 Authors Present for Posters Labeled B

(A Posters are listed alphabetically by presenting author)


B Active Site Analogues of Cytochrome P450: Characterization of the Ligand Sphere by Pulse EPR and ENDOR Techniques, R. Bachmann, A. Schweiger, H. Aissaoui, and W.-D. Woggon, ETH Zentrum, Switzerland and University of Basel, Switzerland.

A Adsorption of Spin-Labeled CTAB on Silica Surfaces: Strong Binding Sites and Surfactant Orientation by Broadening, M. G. Bakker, G. L. Turner, and K. Zhang, University of Alabama.

B AN INVESTIGATION OF ESEEM LINESHAPE AND ZEEMAN FIELD-DEPENDENCE FOR THE TWO PRINCIPAL TYPES OF NITROGEN ATOMS, C. Bender, Albert Einstein College of Medicine.

A AN IMPROVED PROTOCOL FOR THE EXPERIMENTAL MEASURE OF THE LINEAR ELECTRIC FIELD EFFECT, C. Bender, Albert Einstein College of Medicine.

B PARAMAGNETIC CENTERS IN BOROPHOSPHOSILICATE AND PHOSPHOSILICATE GLASS THIN FILMS, C. A. Billman, M. Lillis, P. M. Lenahan, R. Fuller, H. Evans, and R. Paulsen, Pennsylvania State University, Harris Semiconductor, and Motorola Corporation.

A HYPERFINE TENSORS FOR \(1=1/2\) NUCLEI BY CONTOUR LINESHAPE ANALYSIS. APPLICATION TO INORGANIC COMPLEXES AND PROTEIN ACTIVE SITES, M. K. Bowman and S. A. Dikanov, Pacific Northwest National Laboratory and Institute of Chemical Kinetics and Combustion, Russia.

B COPPER ACCUMULATION IN TISSUES AFTER ACUTE ETHANOL TREATMENT, W. Chamulitrat and J. J. Spitzer, Louisiana State University Medical Center.


B MAGNETIC FIELD DEPENDENCE OF EPR LINELINETHS IN AQUEOUS SOLUTIONS OF GD(III) (\(s=7/2\)) AND MN(II) (\(s=5/2\)) CHELATES, R. B. Clarkson, A. I. Smirnov, T. I. Smirnova, R. I. Konda, H. Kang, and R. L. Belford, University of Illinois.

A TWO-DIMENSIONAL COMBINATION PEAK (2D-CP) EXPERIMENT, S. E. Van Doorslaer and A. Schweiger, ETH Zurich, Switzerland.

B MAGNETIC INTERACTIONS IN (COPPER-DIPEPTIDES) SALTS: \(Cu^{2+}.GLY-TRP\) AND \(Ca^{2+}.TRP-GLY\), A. J. da Costa Filho, R. Calvo, and O. R. Nascimento, Instituto de Fisica de Sao Carlos, Brazil.

A PHOSPHAFULVENE RADICAL ANIONS: ELECTROCHEMICAL GENERATION, EPR STUDY AND AB INITIO INVESTIGATIONS, M. Geoffroy, A. A. Badri, and M. Chentit, University of Geneva, Switzerland.


A "VESE-ENDOR INVESTIGATION OF VANADYL MODEL COMPLEXES, C. Grant, J. Ball, R. D. Britt, B. Hamstra, and V. Pecoraro, University of California - Davis and University of Michigan.


A MODELS OF THE INTRACELLULAR AND EXTRACELLULAR TISSUE WATER: IMPLICATIONS FOR EPR MICROVISCOSITY MEASUREMENTS, H. J. Halpern and E. D. Barth, University of Chicago.

B EPR AND X-RAY CRYSTALLOGRAPHIC STUDIES OF DIMETHYLSULFOXIDE REDUCTASE FROM RHODOBACTER CAPSULATUS: IMPLICATIONS FOR CATALYSIS AND ELECTRON TRANSFER, I. Lane, P. S. Solomon, A. S. McAlpine, G. R. Hanson, S. Bailey, and A. McEwan, University of Queensland, Australia.


B PULSED EPR STUDIES OF THE (CH3)COOH RADICAL FORMED BY \(^{18}I\)IRRADIATION OF \(\alpha\)-NH, ISOBUTYRIC ACID AND DI-METHYL-MALONIC ACID, J. R. Harbridge, S. S. Eaton, and G. R. Eaton, University of Denver.

A EPR STUDIES OF LEAD MAGNESIUM NIOBATE PIEZOELECTRICS, J. Huang, M. Benjamin, and J. J. Fitzgerald, South Dakota State University.

B THE INFLUENCE OF F\(^{+}\) ON T\(^{+}\) OF THE PRIMARY REACTANTS (D , I , Q , Q ) IN REACTION CENTERS FROM PHOTOSYNTHETIC BACTERIA, R. Calvo, R. A. Isaacson, E. C. Abresch, and G. Feher, University of California - San Diego.

A POLYNUCLEAR COPPER COMPLEXES INVESTIGATED BY HIGH-FREQUENCY EPR, H. Kab, E. Goovaerts, A. Bouwen, D. Schoemaker, and R. E. P. Winpenny, University of Antwerp, Belgium, and University of Edinburgh, U. K.
A QUANTITATIVE DETERMINATION OF THIOLS USING NEW DISULFIDE IMIDAZOLIDINE BIRADICAL, V. Khramtsov, V. Yelinova, Yu. Gluzachev, and V. Reznikov, Institute of Chemical Kinetics & Combustion, Russia.

PHOTOINDUCED ELECTRON TRANSFER BETWEEN CAROTENOIDs AND SOL VENT MOLECULES, T. A. Konovalova, V. V. Konovalov, and L. D. Kispert, University of Alabama.

ESR OF MO(V) DISPERSED IN POLYMER MATRICES, K. Kruczala, K. Dyrek, and S. Schlick, University of Detroit Mercy.

2D SPATIAL- SPECTRAL ESR IMAGING BASED ON MO(V), K. Kruczala, Z. Gao, and S. Schlick, University of Detroit Mercy.

DPPH AS A STANDARD IN HIGH FIELD EPR SPECTROSCOPY, J. Krzvstek, A. Sienkiewicz, L. Pardi, M. Rohrer, and L. C. Brunei, National High Magnetic Field Laboratory and Polish Academy of Sciences, Poland.

EPR SPECTRA FROM "EPR-SILENT" SPECIES: HIGH FIELD EPR SPECTROSCOPY OF MANGANESE(III) PORPHYRINS, D. P. Goldberg, J. Telser, J. Krzvstek, L. C. Brunei, A. G. M. Barrett, and B. M. Hoffman, Northwestern University, National High Magnetic Field Laboratory, and Imperial College London, U.K.

Tuesday evening - EPR Symposium dinner. All attendees are invited, see information on http://www.du.edu/~seaton/eprsym.html

Wednesday, August 6, 1997

Session VI, L. Kevan presiding

8:30 HIGH-FIELD EPR IN THE INVESTIGATION OF LOW-DIMENSIONAL MOLECULAR MAGNETIC MATERIALS, L. Pardi, L.-C. Brunei, A. Caneschi, and D. Gatteschi, National High Magnetic Field Laboratory and University of Florence, Italy.


10:00 Break

10:30 A PHYSICALLY BASED PREDICTIVE MODEL FOR E' GENERATION IN AMORPHOUS SiO<sub>2</sub> FILMS ON SILICON, P. M. Lenahan, B. D. Wallace, and J. F. Conley, Jr., Pennsylvania State University and Dynamics Research Corporation.

10:55 A NEW INTERPRETATION OF CR* SPIN-LATTICE RELAXATION DATA IN Cu<sup>2+</sup>N<sup>2+</sup> SPINEL: ROLE OF EXCHANGE INTERACTION, S. K. Misra, Concordia University, Canada.

11:15 TIME DOMAIN EPR, 2D-ESR, AND CW-ENDOR MEASUREMENTS OF Ni(I) AND Ni(III) TETRACYANIDES IN NaCl AND KCl HOST LATTICES, N. V. Vugman, J. A. Coelho Neto, and N. M. Pinhal, Universidade Federal do Rio de Janeiro, Brazil.

11:35 COMPUTER SIMULATION OF MAGNETIC RESONANCE SPECTRA employing homotropy, K. F. Gates, G. R. Hanson, and K. Burrage, University of Queensland, Australia.

Session VII, P. M. Lenahan presiding

1:30 THE PERFORMANCE OF A SECOND GENERATION FT-EPR SPECTROMETER, P. Hofer, Bruker Instruments, Germany.

2:00 ELECTRICALLY DETECTED MAGNETIC RESONANCE IN SI/SI<sub>10</sub> 7G/E<sup>+</sup> HETEROSTRUCTURES, C. F. O. Graeff, M. Holzmann, M. S. Brandt, M. Stutzmann, and F. Schaffler, University of Sao Paulo, Brazil, Technical University Munchen, Germany, and Daimler-Benz AG, Germany.

2:30 Break

Session VIII, Posters, S. S. Eaton presiding

3:00 - 4:00 Authors Present for Posters Labeled C
4:00 - 5:00 Authors Present for Posters Labeled D

(Posters are listed alphabetically by presenting author)

C EPR INVESTIGATIONS OF NITROUS OXIDE DECOMPOSITION ON RUTHENIUM AND COPPER ION-EXCHANGED ZEOLITES, P. J. Carl and S. C. Larsen, University of Iowa.


D  A NOVEL LOADING-TOLERANT LARGE HOMOGENEOUS VOLUME L-BAND RESONATOR DESIGN FOR IN-VIVO EPR SPECTROSCOPY AND IMAGING, J. A. B. Lohman, A. M. Allan, A. W. Miller, A. J. Illsley, and R. Ladbury, Buhler Spectrospin Limited, U. K.

C  AN IN SITU RADIOLYSIS ESR STUDY OF SPIN TRAPPING BY NITRONES: THE EFFECT OF INTRAMOLECULAR INTERACTIONS ON SPIN ADDUCT STABILITY IN AQUEOUS SOLUTION, K. P. Madden and H. Taniguchi, University of Notre Dame.

D  PLATFORM-INDEPENDENT EPR DATA ACQUISITION: IMPLEMENTATION IN WINDOWS, R. Morse, Illinois State University.

C  EFFECT OF NITROXIDES ON CELL GROWTH AND DEVELOPMENT, R. Morse, L. Pham, W. Brix, J. Cianfrogna, and G. Martino, Illinois State University.


D  DESIGN OF A HIGH PERFORMANCE SURFACE-COIL-TYPE RESONATOR FOR THE STRIATUM OF RAT FOR THE BRAIN FUNCTION STUDY, M. Ono, T. Yamura, H. Hirata, M. Hiramatsu, Yamagata University, Japan.

C  EPR AND ENDOR OF FREE RADICAL TAGGANTS, M. D. Pace and J. Joseph, Medical College of Wisconsin.

D  GENERAL THEORY OF THE RELAXATION PROCESSES FOR MULTILEVEL SPIN SYSTEMS IN DILUTE PARAMAGNETIC SOLIDS AT HIGH TEMPERATURE, F. F. Popescu, University of Bucharest, Romania.


D  TWO NEW HOLE-BURNING EXPERIMENTS WITH HIGH TURNING ANGLES, J. J. Shane and A. Schweiger, ETH Zentrum, Switzerland.

C  PULSE EPR AT Q-BAND FREQUENCIES, J. J. Shane, R. Rakhmatouline, J. Forrer, and A. Schweiger, ETH Zentrum, Switzerland.

D  A NEW SPIN DENSITY EQUATION FOR NON-PLANAR CATION RADICALS OF ETHYLENE AND ITS ALKYL DERIVATIVES, S. Shih, Yuan-Tze Institute of Technology, Taiwan.

C  RAPID SCAN DIELECTRIC RESONATOR-BASED FLOW AND STOPPED-FLOW EPR, A. Sienkiewicz, A. M. da Costa Ferreira, H. Taylor, R. E. Hansen, and C. P. Scholes, Polish Academy of Sciences, Poland, SUNY-Albany, and Universidade de Sao Paulo, Brazil.

D  COMPARATIVE SPIN-LABEL SPECTRA ATX-BAND (9.5 GHZ) AND W-BAND (95 GHZ), A. I. Smirnov, R. L. Belford, R. B. Clarkson, T. I. Smirnova, and M. J. Nilges, University of Illinois.

C  ORIENTED SELF-ASSOCIATION OF COPPER(II) TETRAFLUOROPORPHINE IN LIPID BILAYER MEMBRANES: AN EPR SPIN LABELING STUDY, W. K. Subczynski, M. Pasenkiewicz-Gierula, and W. E. Antholine, Medical College of Wisconsin and Jagiellonian University, Poland.

D  FERRITIN TEMPERATURE DEPENDENCE STUDY, E. Wajnberg, D. M. S. Esauivel, and L. J. El-Jaick, Centra Brasileiro de Pesquisas Fisicas, Brazil, and CECIERJ, Brazil.


Wednesday evening - Chinese dinner, see poster area for details.
Thursday, August 7, 1997
Session IX, L.-C. Brunel, presiding

8:30  **SOLID-LIQUID SCALAR INTERACTIONS IN AQUEOUS CHARS SUSPENSIONS BY PULSED DNPAT LOW MAGNETIC FIELD**, B. M. Odintsov, P. J. Ceroke, R. L. Belford, and R. B. Clarkson, University of Illinois.

9:00  **TIME-RESOLVED EPR IN HIGH MAGNETIC FIELDS**, H. P. Moll, J. van Tol, A. Witowski, C. Kutter, and P. Wyder, Grenoble High Magnetic Field Laboratory, France.

9:30  **TODAYS PERFORMANCE STANDARDS OF A W-BAND EPR SPECTROMETER**, G. C. Maresch, P. Hofer, and D. Schmalbein, Bruker Instruments, Germany.

10:00 Break

10:20  **PROPOSAL FOR A NEW MULTIPLE RESONANCE TECHNIQUE: THE SPECTROSCOPIC BRIDGE**, F. Popescu, University of Bucharest, Romania.


11:50  Closing Remarks - Sandra S. Eaton

Thursday lunch and afternoon: Bruker User's Group. Please register at the Bruker booth in the exhibit area and contact Dr. Arthur Heiss for information about location and program. Also visit http://www.bruker.com and browse the EPR section.

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**SYMPOSIUM ON FTIR/NIR/RAMAN SPECTROSCOPY**

Organized by Abdul R. Chughtai and Dwight Smith

Financial support provided by ASI Applied Systems, Millersville, MD.

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Monday, August 4, 1997

Session I, Abdul R. Chughtai, presiding

8:35  **EFFECT OF OXIDANTS AND SUBSEQUENT HYDRATION ON BLACK CARBONS AND CARBON BLACKS**, Abdul R. Chughtai and Dwight M. Smith, Department of Chemistry and Biochemistry, University of Denver, Denver, CO 80208.

9:05  **FLEXING THE DIRECTION OF INSTRUMENTATION**, W. G. Fateley, R. A. DeVerse, and R. M. Hammaker, Department of Chemistry, Kansas State University, Manhattan, KS 66506-3701.

9:30  **DEVELOPMENT OF SILANE-MODIFIED GOLD COLLOID ARRAY SUBSTRATES FOR INVESTIGATING SURFACTANT ADSORPTION KINETICS WITH SERS**, Lydia G. Olson and Joel M. Harris, Department of Chemistry, University of Utah, SLC, UT 84112.

10:00 Break


10:40  **CHEMICAL MAPPING USING TWO DIMENSIONAL HADAMARD TRANSFORM RAMAN SPECTROMETRY**, R. A. DeVerse, T. A. Mangold, R. M. Hammaker, and W. G. Fateley, Department of Chemistry, Kansas State University, Manhattan KS. 66506-3701.

11:05  **VIBRATIONAL MICROSCOPY OF INORGANIC SOLIDS AT HIGH EXTERNAL PRESSURES**, Stephanie D. Warner, Ian S. Butler and Ivor Wharf, Department of Chemistry, McGill University, 801 Sherbrooke St. West, Montreal Quebec, Canada H3A2K6.

(Posters are listed alphabetically by presenting author)

1. MANGANESE III CHEMICAL OXYGEN DEMAND PROCEDURE, Wayne T. Bovles, Hach Company, P.O. Box 389, Loveland, CO 80539-0389.

2. INFRARED AND RAMAN SPECTRA OF TETRACALCIUM PHOSPHATE, Ajit Jillavenkatesa and Robert A. Condrate, Sr., New York State College of Ceramics, Alfred, NY 14802.

3. ANALYSIS OF PRECONCENTRATED ACTINIDES IN BRINE SOLUTIONS USING ICP-MS, Julie A. Eyre, Sandra L. Bonchin, La Verne A. Gallegos, Thomas M. Yoshida, Los Alamos National Laboratory, CST-9, MS G740, Los Alamos, NM 87545.

4. SOLID-STATE AMPEROMETRIC DETECTOR OF GAS-PHASE HYDROGEN PEROXIDE, Scott D. Holmstrom, James A. Cox, Department of Chemistry, Miami University, Oxford, OH 45056.

5. SPE CLEANUP AND HPLC/UV DETECTION OF DECOQUINA TE IN FEEDS, Jeffrey A. Hurlbut*, Peter A. Perrone*, Joseph M. Storey*, J. David Bradley*, and Calvin C. Walker*, *Chemistry Department, Metropolitan State College of Denver, P.O. Box 173362, Denver, CO 80217, *Food and Drug Administration, Denver Federal Center, P.O. Box 25087, Denver, CO 80225.

6. HPLC/UV DETERMINATION AND SPE CLEANUP OF EPHEDRA ALKALOIDS IN DIETARY PRODUCTS, Jeffrey A. Hurlbut*, Barbara S. Portz*, Kent C. Faul*, Jennifer C. Pensoneau*, *Chemistry Department, Metropolitan State College of Denver, P.O. Box 173362, Denver, CO 80217, *Food and Drug Administration, Denver Federal Center, P.O. Box 25087, Denver, CO 80225.

7. ANALYSIS OF NITROAROMATIC AND NITRAMINE EXPLOSIVES IN SURFACE WATERS USING LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY (LC-MS), Stuart A. Oehrle, Waters Corporation, 34 Maple St., Milford, MA 01757.

8. ANALYSIS OF DEGRADATION PRODUCTS OF CHEMICAL WARFARE AGENTS IN ENVIRONMENTAL MATRICES BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY (HPLC-MS), Stuart A. Oehrle, Waters Corporation, 34 Maple St., Milford, MA 01757.

9. ANALYSIS OF BENZODIAZEPINES IN WHOLE BLOOD BY LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY (LC-MS), Stuart A. Oehrle, Waters Corporation, 34 Maple St., Milford, MA 01757.

10. A NEW WASTE MINIMIZATION METHOD FOR THE DETERMINATION OF TOTAL NONHALOGENATED VOLATILE ORGANIC COMPOUNDS IN TRU WASTES, Walter F. Sandoval, Michael E. Cournoyer, Laura C. Ortega, Leah D. Bustos, MS G740, CST-12, Los Alamos National Laboratory, Los Alamos, NM 87545.


13. A FII TRATION-BASED TECHNOLOGY FOR COPPER SEPARATIONS IN ELECTROPLATING WATERS, Stephen M. Truiillo, Michael E. Cournoyer, Reanna Aguio, MS G740, CST-12, Los Alamos National Laboratory, Los Alamos, NM 87545.


15. DEVELOPMENT OF SOLID-STATE ELECTROCATALYTIC SYSTEMS FOR APPLICATIONS TO AMPEROMETRIC SENSORS, Anna Wolkiewicz, Krzysztof Miecznikowski, James A. Cox, Chemistry Department, Miami University, Oxford, OH 45056.

LUMINESCENCE SYMPOSIUM
Organized by: DeLyle Eastwood and Robert J. Hurtubise

Monday, August 4, 1997
Morning: Robert J. Hurtubise, Presiding
8:30 Opening Remarks
8:35 CHARACTERIZATION OF BENZO(A)PYRENE-DNA ADDUCTS BY SOLID-MATRIX LUMINESCENCE LIFETIMES, R.J. Hurtubise and Y. Chu, Department of Chemistry, University of Wyoming, Laramie, WY 82071-3838.
DETERMINATION OF BENZ[\textit{A}]PYRENE ADDUCTS BY SOLW-MATRLX LUMINESCENCE, Ming Li and Robert J. Hurtubise, Department of Chemistry, University of Wyoming, Laramie, WY 82071-3838.

SEPARATION OF PAH METABOLITES USING GAMMA-CYCLODEXTRIN MODIFIED MICELLAR ELECTROKINETIC CHROMATOGRAPHY WITH LASER-INDUCED FLUORESCENCE DETECTION, Christopher J. Smith, James Grainger, and Donald G. Patterson, Jr., Centers for Disease Control and Prevention, 4770 Buford Hwy., MS F-17, Atlanta, GA 30341.

ENVIRONMENTAL MONITORING USING NEAR-INFRARED FLUOROPHORES, Lawrence Evans III, Koen Van Aken, Lucjan Strekowski, and Gabor Patonay, Department of Chemistry, Georgia State University, University Plaza, Atlanta, GA 30303.

TIME-RESOLVED LUMINESCENCE MONITORING OF INTERMEDIATES IN PHOTOINITIATED FREE-RADICAL KINETICS, Stephanie R. Shield and Joel M. Harris, Department of Chemistry, University of Utah, Salt Lake City, UT 84112.

NON-PARAMETRIC ANALYSIS OF PYRENE PHOTOKINETICS BY DYNAMIC MULTIDIMENSIONAL FLUORESCENCE SPECTROSCOPY, Sharon L. Neal and Michele Villegas, Department of Chemistry, University of California, Riverside, CA 92521.

LUMINESCENCE STUDIES OF A NEW CLASS OF RE(1) POLYPYRIDINE COMPLEXES CONTAINING CIS-CARBOXYL LIGANDS, Erick Schutte, Jeffrey B. Helms, Stephen Woessner, John Bowen, and B. Patrick Sullivan, Department of Chemistry, University of Wyoming, Laramie, WY 82071-3838.


Afternoon Session: Jim Gord and DeLyle Eastwood, CO-chairs

Opening remarks

INTERACTIONS OF POLYMERS WITH LUMINESCENT METAL COMPLEXES AND ORGANIC DYES. DESIGN OF USEFUL ANALYTICAL SYSTEMS, J. N. Demas, Wenying Xu, and Kristi Kneas, Department of Chemistry, University of Virginia, Charlottesville, VA 22901; B.A. DeGraff, Department of Chemistry, James Madison University, Harrisonburg, VA 22807.


THE USE OF LUMINESCENT SPECIES FOR AERODYNAMIC MEASUREMENTS, Patricia Coleman, Ford Motor Company, P.O. Box 2053, Mail Drop 3083/SRL, Dearborn, MI 48121-2053.


DEVELOPMENT OF SOL-GEL-DERIVED PRESSURE-SENSITIVE COATINGS FOR LIFETIME-BASED IMAGING, Jeffrey D. Jordan and Frank V. Bright, Department of Chemistry, Natural Sciences Complex, State University of New York at Buffalo, Buffalo, NY 14260-3000; Larry P. Goss, William L. Weaver, and Keith D. Grinstead, Jr., Innovative Scientific Solutions, Inc., 3845 Woodhurst Court, Beavercreek, OH 45430-1658; James R. Gord, Aero Propulsion and Power Directorate, Wright Laboratory, Wright-Patterson Air Force Base, OH 45433-7103.

USE OF FLUORESCENCE LIFETIMES OF INTRAMOLECULAR EXCIMER FORMERS FOR TEMPERATURE MEASUREMENT IN LIQUIDS, Steven W. Buckner and R Alan Forlines, Department of Chemistry and Geology, Columbus State University, Columbus, GA 31907 and James R Gord, Wright Laboratory Aero Propulsion and Power Directorate, Wright-Patterson Air Force Base, OH 45433.

SYMP Son M ASS SPECTROMETRY

Organized by Joseph A. Zirrolli

Afternoon: Tuesday, August 5, 1997
To be announced

SYMP Son ON NMR SPECTROSCOPY

NMR Abstracts available at http://www.cchem.berkeley.edu/~jargrp/rmc.html
Organized by L. Frydman, C. Grey, J. Hanna, J. Reimer, S. Sinton, R Wind and J. Yesinowski

Monday, August 4, 1997
Session I: New Techniques and Applications
Clare Grey, Presiding
8:25 Welcoming Remarks, James Yesinowski
8:30 HIGH RESOLUTION NMR SCATTERING, W. Zhang and D. G. Cory, Department of Nuclear Engineering, Massachusetts Institute of Technology, NW14-4111, 150 Albany St., Cambridge, MA 02139.
9:00 SEDOR CAN COUNT SPINS, T. Gullion and M. S. Conradi, Department of Chemistry, Department of Physics, Washington University, St. Louis, MO 63130.
10:00 Break
10:30 NMR STUDIES OF ADSORBATES ON COMMERCIAL FUEL CELL ELECTRODES IN AN AQUEOUS ENVIRONMENT, B.M. Rush, M. S. Yahnke, J.A. Reimer, E.J. Cairns, Energy and Environment Division, Lawrence Berkeley National Laboratory and Department of Chemical Engineering, University of California at Berkeley, Berkeley, CA 94720.
11:00 IN SITU SOLID STATE NMR STUDIES OF HETEROGENEOUS ENVIRONMENTAL PHOTOCATALYSIS, D. Rafferty, S. J. Hwang and C. Petucci, Department of Chemistry, Purdue University, West Lafayette IN 47907.
11:30 HYDROGEN BONDING AND EXCHANGE IN SUPERCRITICAL WATER AND ALCOHOLS, M. M. Hoffmann and M. S. Conradi, Washington University-1105, Departments of Physics and Chemistry, One Brookings Drive, St. Louis, Missouri 63130.

Monday, August 4, 1997
Session II, Poster Session A (Odd-numbered posters will be presented.)
Robert Wind, Presiding
(Posters listed in alphabetical order of presenting author.)
1:30-3:00
2. MULTIPLE QUANTUM FILTERING AND SPIN EXCHANGE IN SOLID STATE NMR, Yong Ba and J.A. Ripmeester, Steacie Institute for Molecular Sciences, National Research Council of Canada, Ottawa, K1A OR9, Canada.

https://digitalcommons.du.edu/rockychem/vol39/iss1/1
4. EXAMINATION OF THE DYNAMICS OF SOLVENT-SOLUTE INTERACTIONS BY MONITORING PARAMAGNETIC SPECIES-INDUCED \(^{1}H\) AND \(^{2}H\) RELAXATION BEHAVIOR, R.D. Bates, Jr.

Department of Chemistry, Georgetown University, Washington, DC 20057.

5. INVESTIGATION OF PARTIAL OXIDATION CATALYSTS BY SOLID-STATE NMR, J.M. Bemis.

M.C. Douskey and E.J. Munson, University of Minnesota, 207 Pleasant St. S.E., Minneapolis, MN 55455.

6. THE USE OF LASER-POLARIZED XENON IN SURFACE NMR UNDER MAGIC ANGLE SPINNING CONDITIONS, E. Brunner, R. Seydoux, M. Haake and A. Pines, Materials Sciences Division, Lawrence Berkeley National Laboratory and the Departments of Chemistry and Chemical Engineering, University of California, Berkeley, CA, 94720.

7. LONG RANGE C-H DIPOLAR COUPLINGS IN LIQUID CRYSTALS MEASURED BY MULTI-DIMENSIONAL NMR EXPERIMENTS, S. Caldarelli, A. Lesage and L. Emsley, Institut de Recherches sur la Catalyse-CNRS, 69626 Villeurbanne, France; Ecole Normale Superieure de Lyon, 69364 Lyon, France.


9. HIGH-RESOLUTION SOLID STATE \(^{19}F\) MAS NMR STUDY OF OXYGEN/FLUORINE ORDERING IN OXYFLUORIDES, Lin-Shu Du, Francis Wang and C.P. Grey, SUNY at Stony Brook, Department of Chemistry, Stony Brook, NY 11794-3400.

10. THE USE OF THE INADEQUATE EXPERIMENT TO OBTAIN THROUGH-BOND CONNECTIVITIES IN SOLIDS, A. Lesage, C. Auger, S. Caldarelli and L. Emsley, Ecole Normale Superieure de Lyon, 69364 Lyon, France.


12. TRIPLE, QUINTUPLE AND HIGHER ORDER MULTIPLE QUANTUM MAS NMR OF QUADRUPOLAR NUCLEI, C. Fernandez, J.-P. Amoreux, L. Delevoye, and M. Pruski, 1-CNRS URA801, Universite des Sciences et Technologies de Lille, 59655 Villeneuve d'Ascq, France; Ames Laboratory, Iowa State University Ames, Iowa 50011.

13. OXYGEN-17 NMR 1D AND 2D CHARACTERIZATION OF YTTRIUM OXYDE POLYMORPHS, P. Florian, D. Massiot, J.P. Coutures and P.J. Grandinetti, CNRS-CRPHT, 1D Av. Rech. Scientifique, 45071 ORLEANS CEDEX 2, France; Ohio State University, 120 W. 18th Avenue, Columbus OH 43210-1173.


15. SOLID-STATE NMR INVESTIGATION OF \(^{13}C\) AND \(^{15}N\) LABELED NUCLEOSIDES AND NUCLEIC ACIDS USING DRAWS, K. B. Geahigan, J. M. Miller, S. S. Kiihne and G. P. Drobny, University of Washington, Department of Chemistry, Seattle, WA 98195.

16. VARIABLE TEMPERATURE LI-7 NMR STUDIES OF NICKEL SUBSTITUTED LITHIUM MANGANESE OXIDE SPINELS, B.A. Gee, C. Horne, E. Cairns and J.A. Reimer, Energy and Environment Division, Lawrence Berkeley National Laboratory, Department of Chemical Engineering, 201 Gilman Hall, University of California, Berkeley, CA. 94720.

17. RELATIONSHIPS BETWEEN O-17 NMR PARAMETERS AND STRUCTURE IN NETWORK-MODIFIED SILICATES AND THEIR APPLICATION TO GLASS STRUCTURE, P. J. Grandinetti, K. E. Vermillion, P. A. Florian, I. Farnan and J. F. Stebbins, Department of Chemistry, Ohio State University, Columbus, OH 43210, ; CRPHT-CNRS, 45071 Orleans, France; Department of Earth Sciences, Cambridge University, Cambridge CB2 3EQ, UK; Department of Geology, Stanford University, Stanford, CA 94305-2115.

18. NMR CHARACTERIZATION OF MATERIALS USING GASEOUS AND LIQUID PROBES, P.M. Gregory, R. Gerald & R.E. Botto, Chemistry Division, Argonne Ntional Laboratory, 9700 South Cass Ave., Argonne, IL 60439.

19. HEXAKIS(TRIFLUOROMETHYL)BENZENE IS NOT A SUITABLE \(^{19}F\)-\(^{13}C\) CROSS POLARIZATION STANDARD, E.W. Hagaman and D.K. Murray, Oak Ridge National Laboratory, P. O. Box 2008, Oak Ridge, Tennessee 37831-6201.

21. MAS NMR STUDIES OF CARBOTHERMAL SYNTHESIS OF LOW-Z BETA'-SIALON, K.J.D. MacKenzie, T. Ekstrom, G. V. White, and J.S. Hartman, New Zealand Institute for Industrial Research and Development, Lower Hutt, New Zealand; Department of Inorganic Chemistry, Stockholm University, Stockholm, Sweden; Department of Chemistry, Brock University, St. Catharines, Ontario L2S 3A1, Canada.

22. LI-7 AND DOUBLE RESONANCE NMR OF LITHIUM-INTERCALATED MICROPOROUS CARBONS, S.E. Hayes, W.R. Even, R.W. Crocker, Zhengming Zhang and H. Eckert, Department of Chemistry, University of California, Santa Barbara, CA 93106; Sandia National Laboratories, P.O. Box 969, Livermore, CA 94551; Eveready Battery CO., P.O. Box 45077, Westlake, OH 44145.

23. 7LI NMR SINGLE CRYSTAL STUDY OF ALANYLGLYCINE LITHIUM BROMIDE DIHYDRATE, A. Metz, B. Herreros and G.S. Harbison, Dept. of Chemistry, University of Nebraska at Lincoln, Lincoln, NE 68588-0304.

24. EXAMINATION OF DEFECT-ASSISTED DIFFUSION PROCESSES IN THE N1, XAL SYSTEM VIA 27AL NMR AND POSITRON ANNHIILATION SPECTROSCOPY, T. J. Bastow, G. W. West, A. J. Hill, M. E. Smith, A. Siegle and S. Koch, CSIRO Division of Materials Science and Technology, Private Bag 33, S. Clayton MDC, Clayton, VIC 3169 Australia; Dept. of Physics, University of Kent, Canterbury, Kent, UK CT2 7NR; Max-Planck-Institut fur Metallforschung, Postfach 80 06 65, 70506 Stuttgart, Germany.

25. CONFORMATIONAL MOTIONS WITHIN MOLECULAR CRYSTALS BY NMR RELAXATION, S. A. Holmes and J. H. Strange, Physics Laboratory, University of Kent, Canterbury, Kent, CT2 7NR, UK.

26. DYNAMIC NUCLEAR POLARIZATION IN DOPED BENZAMIDE AND DIBENZOFURAN, Jian Zhi Hu, Baolian Yang, R.A. Wind, D.M. Grant, R. J. Pugmire and Chaohui Ye, University of Utah, Pacific Northwest National Laboratory, and the Wuhan Institute of Physics, Wuhan, PRC.

27. NEW TECHNIQUES FOR NMR STUDIES OF HETEROGENEOUS CATALYSIS, P.K. Isbester, J. Grenz and E.J. Munson, University of Minnesota, 207 Pleasant St. S.E., Minneapolis, MN 55455.

28. WHAT CAN NMR AND IR SPECTROSCOPY TELL ABOUT THE PNA+Sensitivity of Electrode Glasses, K. Herzog, B. Thomas, C. Jager, University of Mining and Technology, Institute of Analytical Chemistry, Leipziger Str. 29, 09596 Freiberg/Sa., Germany; Friedrich Schiller University, PATF, Max Wien Platz 1, 07743 Jena, Germany.

29. "XE NMR STUDIES OF COMPETITIVE ADSORPTION, A.K. Jameson, C. Jameson and P. Kostikin, Department of Chemistry, University of Illinois at Chicago 60607-7061; Loyola University, Chicago IL 60626.

30. GCMM SIMULATIONS OF THE "XE NMR CHEMICAL SHIFTS IN CAA, SILICALITE, AND FAUJASITES, C.A. Jameson, A.K. Jameson and Hyung-Mi Lim, Department of Chemistry, University of Illinois at Chicago 60607-7061; Loyola University, Chicago IL 60626.

31. SI-29 MAS NMR OF HIGHLY ORDERED POLYMER-SILICA NANOCOMPOSITES, Elizabeth Juang, Sanlin Hu, D.H. Gray, Doug Gin, J.A. Reimer, Materials Science Division Lawrence Berkeley National Laboratory and Depts. of Chemistry and Chemical Engineering, University of California, Berkeley, CA 94720.

32. INEPT EXPERIMENTS INVOLVING QUADRUPOLE NUCLEI IN SOLIDS, Hsien-Ming Rao and C.P. Grey, Chemistry Department, State University of New York, Stony Brook, NY 17790-3400.

33. 13C NMR SPECTRAL EDITING AND SPIN COUNTING ON THE ORGANIC COMPONENTS OF SOIL, D. Keeler and G. E. Maciel, Department of Chemistry, Colorado State University, Fort Collins, CO 80523.

34. A SOLID-STATE COBALT T-59 NMR STUDY OF OCTAHEDRAL COBALT(III) COMPLEXES, C.W. Kirby and W.P. Power. Guelph-Waterloo Centre for Graduate Work in Chemistry, Department of Chemistry, University of Waterloo, Waterloo, Ontario, N2L 3G1, Canada.

35. SI-29 MAS NMR OF HIGHLY ORDERED POLYMER-SILICA NANOCOMPOSITES, Elizabeth Juang, Sanlin Hu, D.H. Gray, Doug Gin, J.A. Reimer, Materials Science Division Lawrence Berkeley National Laboratory and Depts. of Chemistry and Chemical Engineering, University of California, Berkeley, CA 94720.


37. CALCULATING QUADRUPOLE COUPLING CONSTANTS, Young-Sik Kye and G.S. Harbison, Dept. of Chemistry, University of Nebraska, Lincoln, NE 68588-0304.

38. UBIQUITIN UNFOLDING THERMODYNAMICS AS PROBED BY HYDROGEN EXCHANGE, H. Le, M. Schick and R. R. Ernst, Labor, fur Physikalische Chemie, ETH-Zentrum, 8092 Zurich, Switzerland.


40. ON THE ORIGIN OF SPINNING SIDEBANDS IN MQMAS EXPERIMENTS, L. Marinelli and L. Frydman, Department of Chemistry (M/C 111), University of Illinois at Chicago, 845 W. Taylor Street, Chicago, IL 60607-7061.

42. "XE AND 1H NMR STUDIES OF POLYSTYRENE NANOGELS, K. J. McGrath, C.M. Roland, M. Antonietti and M. Neese, Code 6120, Naval Research Laboratory, Washington, DC 20375; MPI Kolloid und Grenzflachenforschung, Kantstr 55 D 14513 Teltow, Germany.

43. CHARACTERIZATION OF QUADRUPOlar AND CHEMICAL SHIFT TENSORS BY 2D MULTIPLE-QUANTUM NMR SPECTROSCOPY, A. Medek and L. Frydman, Department of Chemistry (M/C1 11), University of Illinois at Chicago, 845 W. Taylor St., Chicago, IL 60607-7061.

44. INVESTIGATION OF DECOUPLING AND DIPole RECOUPLING TECHNIQUES OF UNIFORMLY Labeled COMpounds UNDER HIGH SPEED MAS, A.K. Mehta, B.A. Tounge, S.T. Burns, Xiaoling Wu and K.W. Zilm, Department of Chemistry, Yale University, New Haven CT 06511.


47. A THEORETICAL STUDY OF THE DIPOLAR AND SCALAR CONTRIBUTIONS FROM THE UNPAIRED ELECTRON TO 1H NMR RELAXATION RATES IN LOW-SPIN METALLOPORPHYRIN COMPLEXES. K. I. Momot. F. A. Walker, Department of Chemistry, University of Arizona, Tucson, Arizona, 85721.


49. "SI MAS NMR CHARACTERIZATION OF PDMS-SILICA COMPOSITES, S. A. Myers and A. Nazeri, Naval Air Warfare Center, Chemistry and Materials Branch, Code 4B2300D, China Lake, CA 93555; Naval Research Laboratory, Composites and Ceramics Branch, Code 6374, Washington, DC 20375.

50. SOLID-STATE NMR STUDIES OF POLYMORPHISM IN PHARMACEUTICALS, B.E. Padden, M.T. Zell, E.J. Munson, Haijian Zhu, Jane Li and D.W. Grant, Departments of Chemistry and Pharmaceutics, University of Minnesota, Minneapolis, MN, 55455.

51. DIRECT ASSIGNMENT OF 13C NMR SPECTRA OF RIGID SOLIDS BY TWO-DIMENSIONAL MAGIC ANGLE SPINNING SEPARATED LOCAL FIELD SPECTROSCOPY, Honghm Pan, Department of Chemistry, Texas A&M University, College Station, TX 77843-3255.

52. SOLID-STATE NMR STUDIES OF POLYMER ORDER AND MOBILITY IN POLYMER-OXIDE NANOCOMPOSITES, W.P. Power, G.R. Goward, T.A. Kerr and L. F. Nazar, Guelph-Waterloo Centre for Graduate Work in Chemistry, Department of Chemistry, University of Waterloo, Waterloo, ON, N2L 3G1, Canada.

53. NIOBIUM-93 NUTATION SPECTROSCOPIC STUDY OF PIEZOELECTRIC LEAD MAGNESIUM NIOBATE AND RELATED MATERIALS, S. Prasad, P. Zhao, J. Huang, J.J. Fitzgerald and J. Shore, Department of Chemistry and Biochemistry, South Dakota State University, Brookings, SD 57007.

54. INVESTIGATION OF THERMAL TRANSFORMATIONS OF CLAY MINERALS BY 27AL AND 29SI SOLID-STATE NMR, G. Roch, M.E. Smith and S. Drachman, Physics Laboratory, University of Kent, Canterbury, Kent, CT2 7NR, UK.; Redland Centre of Technology, Gatwick Road, Crawley, West Sussex, RH10 2NG, UK.

55. INVESTIGATIONS OF THE STRUCTURE AND "INTERFACIAL" SURFACE CHEMISTRY OF BIOGLASS BY SOLID-STATE MULTINUCLEAR NMR SPECTROSCOPY, G. Sarkar and John J. Fitzgerald, Department of Chemistry and Biochemistry, South Dakota State University, Brookings SD.

56. NMR INVESTIGATIONS ON RARE EARTH ALUMINOSILICATE GLASSES, T. Schaller and J.F. Stebbins, Department of Geological and Environmental Sciences, Stanford University, Stanford, California 94305-2115.

57. SURFACE NMR BY SPINOE OF LASER-POLARIZED XENON UNDER CONTINUOUS FLOW CONDITIONS, R. Scydoux, M. Haake, E. Brunner, J.A. Reimer and A. Pines, Materials Sciences Division, Lawrence Berkeley National Laboratory and the Departments of Chemistry and Chemical Engineering, University of California, Berkeley, CA 94720.

58. CHANGES IN THE STRUCTURE OF TSAREGORODTSEVITE [N(CH3)4+][Si3Al5J06], ON ANNEALING, B.L. Sherriff, G. Kunath-Fandrei, C. Jager, E. V. Sokolova, Dept. Geological Sciences, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2; Institut fur Optik und Quantenoptik, Friedrich Schiller Universitat, Max-Wien Platz 1, D-07743 Jena, Germany; Dept. Crystallography, Faculty of Geology, Moscow State University, Moscow 119899, Russia.
59. CHARACTERIZATION OF MATERIALS USING MULTIPLE QUANTUM AND FIELD SWEEP NMR OF QUADRUPOLE NUCLEI, I.J.F. Poplett, M.E. Smith and E.R.H. van Eck, Department of Physics, University of Kent, Canterbury, Kent, U.K. CT2 7NR.


62. FAST FIELD-CYCLING NMR STUDY OF MEMBRANE UNDULATIONS, J.O. Struppe, G. Klose and F. Noack, Universitaet Stuttgart, 70550 Stuttgart, Germany; Dept. of Chemistry, University of California San Diego, 9500 Gilman Drive, CA. 92093-0359; Physikalisches Institut, Universitaet Leipzig, 04103 Leipzig, Germany.

63. SOLUTION STRUCTURES OF LARIAT ETHERS AND THEIR ALKALI METAL SALTS BY NMR SPECTROSCOPY, V.S. Talanov, D. W. Purkiss and R. A. Bartsch, Department of Chemistry and Biochemistry, Texas Tech University, Lubbock, TX. 79409.

64. ULMS MICROPOROUS ALUMINO-PHOSPHATE. A P-31 NMR DOUBLE QUANTUM CHECK FOR SPATIAL GROUP DETERMINATION, F. Taulelle, C. Jager, T. Loiseau, J. Renaudin, G. Ferey, RMN et Chimie du Solide, UMR 50 CNRS, 4 rue Blaise Pascal, 67070 Strasbourg Cedex, France; Friedrich Schiller University, PATF, Max Wien Platz 1, 07743 Jena, Germany; IREM, UMR C 0173 CNRS, Institut Lavoisier; Universite de Versailles Saint Quentin, 45 avenue des Etats Unis 78035 Versailles, France; Laboratoire des Fluoreuses, ESA 6010 CNRS, Universite du Mans, 72017 Le Mans Cedex, France.

65. ARGYRODITES FAMILY. SYMMETRY ELEMENTS COUNTING BY NMR INEQUIVALENCE DETERMINATION AND PHASE TRANSITIONS STUDIES, F. Taulelle, E. Gaudin, M. Evain and C. Jager, RMN et Chimie du Solide, UMR 50 CNRS, Universite Louis Pasteur, 4 Rue Blaise Pascal, 67070 Strasbourg Cedex, France; Institut des Materiaux de Nantes, UMR 6502 CNRS, Universite de Nantes, 2 Rue de la Houssiniere, 44072 NANTES Cedex 03, France; Friedrich Schiller University, PATF, Max Wien Platz 1, 07743 Jena, Germany.

66. ANALYSIS OF MULTIPLE PULSE SEQUENCES FOR THE HIGH RESOLUTION OF SOLID-STATE NMR SPECTROSCOPY, D. Taylor, M.R. Kumar and A. Ramamourthy, Biophysics Research Division and the Department of Chemistry, The University of Michigan, Ann Arbor, MI 48105.

67. HIGH FIELD CP MAS OF FULLY "C LABELED POLYCRYSTALLINE COMPOUNDS, B.A. Tounge, A.K. Mehta, Xiaoling Wu and K.W. Zilm, Department of Chemistry, Yale University New Haven, CT 06511.

68. "CD NMR CHARACTERIZATION OF CDS NANOCRYSTALLINE POWDERS OBTAINED BY PRECIPITATION FROM AQUEOUS SOLUTION, V. Ladizhansky, G. Hodes and S. Vega. Chemical Physics Department and Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, 76100 Israel.


70. SOLID-STATE NMR STUDIES OF SELF-ASSEMLED MONOLAYERS ON ORDERED MESOPOROUS SUPPORTS (SAMMS), Li-Qiong Wang, Jun Liu, Xiangdong Feng, G.E. Fryxell, and G.J. Exarhos, Pacific Northwest National Laboratories, Richland, WA 99352.

71. NMR STUDIES OF SOME EUTECTIC FORMING SOLID AMINO ACID DERIVATIVES, Yulan Wang and P. S. Belton, Institute of Food Research, Norwich Laboratory, Norwich Research Park, Colney, Norwich NR4 7UA. UK.

72. IN SITU VARIABLE-TEMPERATURE ONE AND TWO-DIMENSIONAL PROTON CRAMPS STUDIES OF PROTON SPIN-EXCHANGE IN COALS, Jincheng Xiong and G.E. Maciel, Department of Chemistry, Colorado State University, Fort Collins, CO 80523.

73. VARIABLE-TEMPERATURE DEUTERIUM NMR STUDIES OF TRIPHENYLMETHYL CATIONS ON EXTERNAL AND INTERNAL SURFACES OF ZEOLITE HY, Jincheng Xiong, Ting Tao and G.E. Maciel, Department of Chemistry, Colorado State University, Fort Collins, CO 80523.

74. NOVEL NANOCOMPOSITES: AN NMR PROBE OF DYNAMICS, Doo-Kyung Yang and D. Zax, Department of Chemistry, Baker Laboratory, Cornell University, Ithaca, NY 14853.


76. LEAD-207 NMR SPECTROSCOPIC STUDY OF PIEZOELECTRIC LEAD MAGNESIUM NIOBATE AND RELATED MATERIALS, P. Zhao, S. Prasad, M. Benjamin, J. Huang, J. J. Fitzgerald and J. Shore, Department of Chemistry and Biochemistry, South Dakota State University, Brookings, SD 57007.
Session III, NMR of Macromolecules
Jeff Reimer, Presiding

3:30 **POLYMERS OF SUBSTITUTED N-PHENYLNORBORNENE-5,6-DICARBOXIMIDE: CHARACTERIZATION OF STRUCTURE AND DYNAMICS**, J. R. Garbow, J. Asrar and J. Goetz, Monsanto Corporate Research, Monsanto Company, St. Louis, MO 63167; Monsanto Growth Enterprises, Monsanto Company, St. Louis, MO 63167; Department of Chemistry, Washington University, St. Louis, MO 63130.

4:00 **THE USE OF CHEMICAL SHIELDING TENSORS TO DETERMINE DIHEDRAL ANGLES IN PROTEINS IN THE SOLID STATE**, J. Heller, D.D. Laws, S. Bush, H.M.L. Bitter, D.E. Wemmer, A. Pines, R.H. Havlin and E. Oldfield, Dept. of Chemistry, University of California, Berkeley, CA 94720; Structural Biology Division and Material Science Division, Lawrence Berkeley National Laboratory; Dept. of Chemistry, University of Illinois at Urbana-Champaign, Urbana, IL, 61801.

4:30 Break

4:45 **SHEAR FLOW OF LIQUID CRYSTALLINE POLYMERS**, C. Schmidt, Institute for Macromolecular Chemistry, University of Freiburg, Sonnenstr. 5, D-79104 Freiburg, Germany.

5:15 **PROTON AND FLUORINE NMR OF NAFTON/SILICA COMPOSITES**, A. J. Vega, M.A. Harmer, Qun Sun and W. E. Farneth, DuPont Central Research and Development, P.O. Box 80356, Wilmington, DE 19880-0356.

Tuesday, August 5, 1997

Session IV, Inorganic Materials Including Glasses
John Hanna, Presiding


9:00 **DQ NMR INVESTIGATIONS OF PHOSPHATE AND SILICATE GLASSES**, C. Jager, P. Hartmann, R. Witter, K. Herzog, B. Thomas, Friedrich Schiller University, PATF, Max Wien Platz 1, 07743 Jena, Germany; University of Mining and Technology, Institute of Analytical Chemistry, Leipziger Str. 49,09596 Freiburg/Sa., Germany.


10:00 Break


11:00 **SOLID-STATE NMR STUDIES OF HETERONUCLEAR SPIN-PAIRS IN TRANSITION METAL COMPOUNDS**, R.E. Wasylishen, K. Eichele, R. Schurko, and S. Kroeker, Department of Chemistry, Dalhousie University, Halifax, Nova Scotia, B3H 4J3, Canada.

11:30 **MIXED X-RAY/NMR STRUCTURAL DETERMINATIONS ON SOLIDS**, F. Taulelle, E. Gaudm, M. Evain, C. Jager, T. Loiseau, J. Renaudin and G. Ferey. RMN et Chimie du Solide, UMR 50 CNRS, Universite Louis Pasteur, 4 rue Blaise Pascal, 67070 Strasbourg Cedex, France; Institut des Materiaux de Nantes, UMR 6502; CNRS, Universite de Nantes, 2 Rue d e la Houssiniere, 44072 NANTES Cedex 03, France; Friedrich Schiller University, PATF, Max Wien Platz 1, 07743 Jena, Germany; IREM, UMR C 0173 CNRS, Institut Lavoisier; Universite de Versailles Sai nt Quentin, 45 avenue des Etats Unis 78035 Versailles, France; Laboratoire des Fluorures, ESA 6010 CNRS, Universite du Mans, 72017 Le Mans Cedex, France.

Tuesday, August 5, 1997

Session V, Poster Session B
Robert Wind, Presiding

1:30-3:00
(Even-numbered posters will be presented. See Session II for complete listing.)
Session VI, Inorganic/Dynamics/MQ NMR
Jeff Reimer, Presiding
3:00 THE USE OF VERY FAST 19F MAS NMR TO STUDY DISORDERED FLUORIDES AND FLUORIDE-ION CONDUCTION, C. P. Grey, F. Wang and Lin-Shu Du, State University of New York at Stony Brook Chemistry Department, Stony Brook, NY 11794-3400.
4:00 ULTRASLOW MOTION IN METALLIC GLASSES DETECTED BY SPIN ALIGNMENT ECHO OF SPIN-3/2 NUCLEI, Xiao-ping Tang, Yue Wu, Department of Physics and Astronomy, University of North Carolina, Chapel Hill, NC 27599-3255.
4:30 Break

Tuesday Evening, August 5, 1997
7:30-9:00 p.m.
Session VII, Vendor Poster Session
Robert Wind, Presiding

Wednesday, August 6, 1997
Session VIII, Robert W. Vaughan Memorial Session
8:30 R.W. VAUGHAN PLENARY LECTURE: PROBING SUPERCONDUCTIVITY BY NMR, Charles P. Slichter, Center for Advanced Study Professor of Physics and Chemistry, University of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, IL 61801-3080.
9:30 NMR DOUBLE RESONANCE PROBES OF STRUCTURAL DISTORTIONS IN ALKALI FULLERIDE SUPERCONDUCTORS, K. Gorny, C. Hahm, J.A. Martindale, C.H. Pennington, D.R. Buffinger and R. P. Ziebarth, Department of Physics, Ohio State University; 174 W. 18th Avenue; Columbus, Ohio 43210.
10:10 Break
10:40 OPTICAL PUMPING FOR APPLICATIONS IN BIOMOLECULAR SOLID STATE NMR, R. Tveko, National Institutes of Health Building 5, Room 112 Bethesda, Maryland 20892-0520.
11:20 CHAIN PACKING AND DYNAMICS IN PURE POLYCARBONATE AND POLYCARBONATE COPOLYMERS, C.A. Klug, D. H. Whitney, R. Yaris, J. Wu, A.F. Yee and J. Schaefer, Department of Chemistry, Washington University, St. Louis, MO 63130; Department of Materials Science and Engineering, The University of Michigan, Ann Arbor, MI 48109.

Wednesday, August 6, 1997
Session IX, Spatially Resolved Dynamics and Structure
Steve Sinton, Presiding
1:30 NMR IMAGING OF CONCENTRATED SUSPENSIONS, S.A. Altobelli, A. Caprihan and E. Fukushima, Lovelace Institutes, 2425 Ridgecrest, SE, Albuquerque, NM 87108.
2:00 3D - VISUALISATION AND QUANTITATION OF COMPLEX FLOW BY MAGNETIC RESONANCE IMAGING, L.D. Hall, A. Hanlon, S.G. Gibbs, D Haycock, S. Ahlett and W. Frith, Herschel Smith Laboratory for Medicinal Chemistry, University of Cambridge School for Clinical Medicine, Robinson Way, Cambridge CB2 2PZ, UK; Unilever Research Colworth Laboratory, Colworth House, Sharnbrook, Bedford, Bedfordshire MK44 1LQ.
2:30 PGSE NMR MEASUREMENTS OF TAYLOR VORTICES IN CONCENTRIC AND ECCENTRIC CYLINDERS, J.P. Seymour, S. A. Altobelli, P.T. Callaghan, E. Fukushima and B. Manz, The Lovelace Institutes, 2425 Ridgecrest Dr. SE, Albuquerque, NM 87108; Dept. of Physics, Massey University, Palmerston North, New Zealand; Dept. of Chemical Engineering, Cambridge University, UK.
3:00 Break

Session X, Optically-Pumped Xenon NMR, Surfaces and Zeolites
Steve Sinton, Presiding
3:30 A NEW PROBE FOR SURFACES: MULTIPLE-QUANTUM FILTERED GAS-PHASE XENON-131 NMR, T. Meersmann, S. A. Smith and G. Bodenhausen, National High Magnetic Field Laboratory 1800 E. Paul Dirac Dr., Tallahassee, FL 32310; Departement de Chimie, Ecole Normale Superieure, 24 rue Lhomond 75231 Paris Cedex 05, France.
Thursday, August 7, 1997
Session XI, Multi-Dimensional and Multiple-Quantum NMR: Lucio Frydman, presiding
8:30 ORDER-RESOLVED SIDEBAND SEPARATION IN MAGIC ANGLE SPINNING NMR OF HALF INTEGRAL QUADRUPOlar NUCLEI, D. Massiot, V. Montouillout, F. Fayon, P. Florian and C. Bessada, CRPHT-CNRS, 1D Av. Rech. Scientifique, 45071 Orleans cedex 2, France.
9:00 MULTIPLE-QUANTUM MAS-NMR WITH CROSS-POLARIZATION, M. Pruski, D.P. Lang, C. Fernandez, L. Delevoye and J.P. Amoureux, Ames Laboratory, Iowa State University, Ames, IA 50011; Laboratoire de Dynamique et Structure des Materiaux Moleculaires, CNRS URA 801, 59655 Villeneuve d'Ascq Cedex, France.
9:30 ENHANCED NUCLEAR SPIN DIFFUSION BY SLOW MAGIC-ANGLE SAMPLE SPINNING FOR THE EXPLORATION OF SOLIDS, Zhehong Gan, P. Robyr and R. R. Ernst, Laboratorium fur Physikalische Chemie, ETH-Zentrum, 8092 Zurich, Switzerland.
10:00 Break
11:00 MULTI-DIMENSIONAL CORRELATION EXPERIMENTS FOR THE MEASUREMENT OF DIPOlar AND QUADRUPOlar COUPLINGS IN SOLID-STATE NMR, L. Emsley, Ecole Normale Superieure de Lyon, 69364 Lyon, France.
11:30 SOLID-STa TE NMR STRUCTURE DETERMINATION OF ORIENTED PROTEINS, S.J. Opella.

SYMPOSIUM ON PHARMACEUTICAL ANALYSIS

Organized by Michael Cutrera, Robert K. Lantz, and Patricia L. Sulik

Tuesday, August 5, 1997:
Robert K. Lantz, presiding
9:45 ISO 9001 VALIDATION, Glen Emelock, CRO Group, Melrose, MA.
10:45 Break
11:00 VALIDATION OF FT/IR SPECTROMETER FOR PHARMACEUTICAL APPLICATIONS, S. Bouffard, Perkin Elmer, San Jose, CA.

Wednesday, August 6,1997:
Morning Session: Michael Cutrera, presiding, Mac-Mod® Analytical Open Forum III
8:30 MODERNIZING HPLC METHODS I: ASSURING METHOD ROBUSTNESS, THINGS YOU MIGHT OVERLOOK
9:30 Break
9:45 MODERNIZING HPLC METHODS II: UPGRADING CURRENT METHODS; IS THE GAIN WORTH THE PAIN?
10:45 Break
11:00 MODERNIZING HPLC METHODS III: LC/MS IS HERE TO STAY! SOME PRACTICAL ADVICE ON COLUMN AND MOBILE PHASE SELECTION.

Afternoon Session: Michael Cutrera, presiding
1:30 CALIBRATING A UV/VIS SPECTROMETER - THE BESTAPPROACH, Adrea C. Reeves and Jerry D. Messman, SpectroStandards Analytical, Ft. Collins, CO.
**SYMPOSIUM ON QUALITY ASSURANCE**
Organized by Carl Craig

**Tuesday, August 5, 1997**
**Afternoon Session**

1:20 **ROUTINE QC STANDARDS USED AS A GUIDE TO CONDUCTING DETECTION LIMIT STUDIES**, Larry Penfold and William Sullivan, Quanterra, Inc., 4955 Yarrow St., Arvada, CO 80020.

1:45 **DEPENDENT VALIDATION AND VERIFICATION TESTING OF TRAC EXPLOSIVE DETECTION SYSTEMS FOR ENHANCED AIR TRANSPORTATION SECURITY**, David F. Glenn, David F. Gianotto, Carta J. Miller, Steven D. Hartenstein, LMITCO, INEEL, P.O. Box 1625-3840, Idaho Falls, ID 83415; Susan F. Hallowell, FAA, FAA Technical Center, AAR-520, Atlantic City IntT Airport, NJ 08405.


2:35 **Break**


3:20 **COMPARISON OF ORGANIZATION QUALITY ASSURANCE REQUIREMENTS**, Jerry Parr, Quanterra, Inc., 4955 Yarrow St., Arvada, CO 80020

**SYMPOSIUM ON RADIOCHEMISTRY**
Organized by Ann Mullin

**Monday, August 4, 1997**
**Morning session: Ann Mullin, presiding**

8:10 Welcoming Remarks, Ann Mullin, U.S. Geological Survey

8:15 **NATURALLY OCCURRING RADON IN HYDROLOGIC STUDIES**, Matthew L. Schirmer, and Michael P. Neary, Center for Applied Isotope Studies, University of Georgia, 120 Riverbend Road, Athens, GA 30605.

8:45 **GROSS ALPHA ACTIVITY IN RADION BEARING GROUND WATER IN THE COASTAL PLAIN OF NEW JERSEY**, Zoltan Szabo, U.S. Geological Survey, 810 Bear Tavern Road, Suite 206, West Trenton, NJ 08328.

9:15 **RADIOASSAY OF RADION ISOTOPES BY COINCIDENCE SPECTROMETRY**, David McCurdv, Yankee Atomic Environmental Laboratory, 580 Main St., Bolton, MA 01740.

9:45 **Break**

10:00 **CALIBRATION BIAS IN MEASUREMENT OF RA-226 IN SOILS BY GAMMA SPECTROMETRY**, Michael Goodwill, Paragon Analytics, Inc., 225 Commerce Dr., Fort Collins, CO 80524.


11:00 **TEMPORAL CHANGES OF SELECTED RADIOCHEMICAL CONCENTRATIONS IN GROUND WATER AT THE IDAHO NATIONAL ENGINEERING LABORATORY, IDAHO**, Roy C. Bartholomay, and Leroy L. Knobel, U.S. Geological Survey, INEL, Ms 4148, P.O. Box 2230, Idaho Falls, ID 83403.
USE OF THE "METHOD DETECTION LIMIT" VERSUS "MINIMUM DETECTABLE CONCENTRATION" IN THE MEASUREMENT AND REPORTING OF TRITIUM IN AQUEOUS SILICA GEL DISTILLATES  

Robert Shannon, Paragon Analytics, Inc., 225 Commerce Dr., Fort Collins, CO 80524.

Afternoon session: Tom Maloney, presiding

1:30  
A NEW TOOL IN THE EVALUATION OF GAMMA-RAY SPECTRAL ANALYSIS SOFTWARE  
D.R. Porterfield, G.H. Brooks, Jr., S.R Garcia, Y.O. Giles, N.L. Koski, and B.L. Lockhart, Los Alamos National Laboratory, P.O. Box 1663, MSK 484, CST-3, Los Alamos, N.M. 87545.

2:00  
AUTORAMP - AN AUTOMATIC UNIT FOR UNATTENDED AEROSOL COLLECTION, GAMMA-RAY ANALYSIS AND DATA TRANSMISSION FROM REMOTE LOCATIONS  

2.30.  
MEASUREMENT OF FLUORESCENCE FROM LOW CONCENTRATIONS OF DNA USING GAMMA RADIATION AS AN excitation SOURCE  
Michael P. Neary, and Richard N. Winn, Center for Applied Isotope Studies, University of Georgia, 120 Riverbend Road, Athens, GA 30605.

3:00  
Break

3:15  
ANALYSIS OF PB-210 IN WATER AND SOIL SAMPLES USING EICHRoM'S LEAD RESIN  
Anil Thakkar, and Dr. James Harvey, EICHRoM Industries, Inc., 8205 S. Cass Ave. #107, Darien, IL 60561.

3:45  
NP-237 SEPARATION AND PURIFICATION BY ANION EXCHANGE CHROMATOGRAPHY  
Antony M.V. Vargees, and Robert Shannon, Paragon Analytics, Inc., 225 Commerce Dr., Fort Collins, CO 80524.

Tuesday, August 5, 1997

Morning session: Catherine Klusek, presiding

8:15  
OVERVIEW OF MARLAP  

8:45  
QUALITY ASSESSMENT PROGRAM: PERFORMANCE EVALUATION FOR ENVIRONMENTAL RADIOCHEMISTRY U.S. DEPARTMENT OF ENERGY, ENVIRONMENTAL MEASUREMENTS LABORATORY  
Pamela D. Greenlaw, and Catherine S. Klusek, USDOE Environmental Measurements Laboratory, 201 Varick St, New York, NY 10014-4811.

9:15  
PROCESS CONTROL AND QUALITY ASSURANCE IN THE COMMERCIAL RADIOCHEMICAL LABORATORY,  
Lee Scott and Mathias Lardy, Quanterra, Inc, 2800 George Washington Way, Richland, WA 99352.

9:45  
Break

10:00  
ARE MATRIX SPIKES COST EFFECTIVE FOR ENVIRONMENTAL RADIOCHEMICAL ANALYSES?  

10:30  
STATISTICAL COMPARISON OF REPlicate PAIRS OF SAMPLES COLLECTED FOR THE U.S. GEOLOGICAL SURVEY QUALITY ASSURANCE PROGRAM AT THE IDAHO NATIONAL ENGINEERING LABORATORY, IDAHO  
Leroy L. Knobel, Linda M. Williams, and Roy C. Bartholomay, U.S. Geological Survey, INEL, MS 4148, P.O. Box 2230, Idaho Falls, ID 83403.

11:00  
ILLUSTRATION OF LABORATORY QUALITY CONTROL CONCEPTS USING A SIMULATED ANALYSIS,  
Jerry Parr and Lindsay Greyer, Quanterra Environmental Services, 4955 Yarrow St, Arvada, CO 80002.

Afternoon session: John Griggs, presiding

1:30  
COMPARISON OF SENSITIVITY AND THROUGHPUT FOR ALPHA/BETA MEASUREMENTS  
Brian Crandell, SRP, and Stan DeFilippis, Oxford Instruments, 601 Oak Ridge Turnpike, Oak Ridge, TN 37831-2560.

2:00  
EFFICIENCY CORRECTION AS A FUNCTION OF INGROWTH FOR RA-116 DETERMINATION GAS FLOW PROPORTIONAL COUNTING  
David Burns, and Renee Gallegos, Paragon Analytics, Inc., 225 Commerce Dr, Fort Collins, CO 80524.

2:30  
HYDROLOGICAL STUDIES BASED ON TRITIUM ANALYSIS - TO ENRICH OR NOT TO ENRICH  
Michael P. Neary, Center for Applied Isotope Studies, University of Georgia, 120 Riverbend Road, Athens, GA 30605.

3:00  
Break

3:15  
AN INNOVATIVE ENVIRONMENTAL DOWN-HOLE LOGGING MEASUREMENT SYSTEM USING SCINTILLATION DETECTORS  
Bill Richardson, Oxford Instruments, 601 Oak Ridge Turnpike, Oak Ridge, TN 37831-2560.

3:45  
DETERMINATION OF WATERBOUND TRITIUM IN LOW MOISTURE SILICA GEL SAMPLES  
MICROWAVE DISTILLATION  
Bahman Pirastah, Paragon Analytics, Inc., 225 Commerce Dr., Fort Collins, CO 80524.
ROCKY MOUNTAIN CONFERENCE ON ANALYTICAL CHEMISTRY

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