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Materials and Molecular Research Division

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Newsletter

Volume 9 Number 1 May 1985

Richards Wins DOE Outstanding Scientific Achievement Award, Elected to NAS

Professor Paul Richards has received double honors recently. In August 1984 he was notified that he had won the DOE Materials Sciences Research Competition's Outstanding Scientific Achievement award in the Solid State Physics category. Then in April 1985 he was elected to the National Academy of Sciences, one of the highest honors that an American scientist can receive. He won the DOE award for his paper "Infrared Emission Spectroscopy of Chemisorbed Molecules on Metal Surfaces." The election to NAS, of course, honors Richards' entire scientific output. The DOE awards are restricted to scientists working at DOE laboratories and are given in three categories — Metallurgy and Ceramics, Solid State Physics, and Materials Chemistry — with only one Outstanding Scientific Achievement award given in each category.

Evans to Continue as Acting CAM Head

MMRD investigator **Anthony G. Evans** will continue as Acting Director of CAM until the appointment of a permanent director. Professor Evans was originally appointed Acting Director from October 1 until December 31, 1984; but since no permanent director was appointed by January 1, 1985, Professor Evans has graciously agreed to serve as director as long as needed.

Five of 100 Best Young U.S. Scientists are MMRD Investigators

Five of America's one hundred best young scientists are investigators at MMRD, according to a recent survey by *Science Digest*. The five are Professors **Ronald Gronsky, Alexander Pines, Robert Ritchie, Peter Vollhardt,** and **Henry Schaefer**. They were joined by Richard Muller of the Physics Division to give LBL 6 of the top 100 young scientists in the *Science Digest* survey. The Bay Area was well represented in the survey, with 25 of the 100 scientists listed.

Phillips Takes Leave of Absence; Muller Appointed Acting MMRD Director

Dr. **Rolf Muller** has been serving as Acting Division Head of MMRD since January 1, 1985. He accepted the position to allow Professor **Norman Phillips**, the new MMRD Head, to take a six-month sabbatical that had been scheduled prior to Professor Phillips' acceptance of the position of MMRD Head. Professor Phillips returned to Berkeley in early January, and again at the end of February to attend the MMRD Annual Review. He is spending his leave in Grenoble, France.

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HONORS and AWARDS HONORS and AWARDS

Professor **Charles Tobias** has been awarded the prestigious William N. Lacey Memorial Lectureship at Caltech. The award is given to an outstanding academic chemical engineer each year, in order to allow students and faculty at Caltech to mix with superior scientists from outside Caltech. Professor Tobias will deliver two lectures at Caltech this winter quarter.

Professor **Alexis Bell** is the 1984 recipient of the Paul H. Emmett Award. This \$3,000 award is given to scientists under 45 years old who have performed outstanding research in catalysis. Bell received the award for the catalysis research he is doing with the Center for Advanced Materials (CAM).

Professor **Marvin Cohen** was featured in the December 1, 1984 *Science News*. His theoretical calculation of the crystal structure of silicon under pressure was the topic of the article "Putting Semiconductor Theory on a More Solid Basis."

Professor **Ron Gronsky** was visited recently by Ezra Heitowit, the staff director of the Subcommittee on Science, Research, and Technology of the House Committee of Science and Technology. Gronsky gave Heitowit a tour of the National Center for Electron Microscopy, which Heitowit saw as part of his tour of LBL. He also met with other Laboratory staff, including MMRD investigator and Laboratory Director **David Shirley**.

Professor **John Clarke** also received a congressional visitor. Congressional aide Harlan Watson, a technical consultant to the Subcommittee on Energy Development and Applications of the House Committee on Science and Technology, visited Clarke and his research group on January 16-17, 1985. Clarke showed Watson the scanning tunneling microscope, developed by Clarke and his coworkers. The supersensitive instrument is used to scan surfaces.

Professor **Ronald Gronsky** has won the Bradley Stoughton Award for Young Teachers of Metallurgy. The \$2000 award, given by the American Society for Metals, rewards young teachers for "their ability to impart knowledge and enthusiasm to students." The award will be presented at the ASM Awards and Annual Dinner in Toronto, Ontario, in October. Past MMRD winners of the award include **Gareth Thomas** and **John W. Morris, Jr.**

Professor **Robert O. Ritchie** has been awarded the 1985 Champion H. Mathewson Gold Medal from The Metallurgical Society of the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME). He and his former student **S. Suresh** were cited for "outstanding contributions to the understanding of fatigue and fatigue crack growth." The award was presented this February during the 114th AIME annual meeting in New York.

Roy Chuck, Jr., a senior in bioengineering at U.C. Berkeley involved in laser photochemistry studies conducted by MMRD investigator **Brad Moore**, was recently named one of four undergraduates who will receive a \$3000 scholarship from the Northern California Chapter of the Achievement Rewards for College Scientists (ARCS) Foundation. The awards have been given for the past 12 years to high-ranking UC undergraduates in the life sciences, physical sciences, and engineering.

The January issue of *Organometallics* was dedicated to the memory of the late **Earl Muetterties**, former MMRD researcher. Among the scientists contributing to the memorial issue are MMRD investigators **Richard Andersen**, **Robert Bergman**, **Ken Raymond**, **Andrew Streitwieser**, and **Peter Vollhardt**.

The Earl Muetterties Memorial Fund, which will be used to endow a visiting scholars' program, has passed the \$33,000 mark. The fund was started by MMRD investigator **Ken Raymond**.

HONORS and AWARDS HONORS and AWARDS

MMRD investigator **John Prausnitz** has been elected a Fellow of the American Institute of Chemical Engineers. AIChE fellows have made outstanding contributions to the field of chemical engineering and must have worked professionally for at least 25 years and have been members of AIChE for at least 10 years.

MMRD investigator **Yuan Lee** was a guest at a White House luncheon on February 12. The luncheon honored outstanding scientists, mathematicians, and engineers. Among other attendees was LBL's Rich Muller, a Physics Division scientist.

Professor **Alexander Pines** received a \$48,000 grant from AT&T to construct a spectrometer for pulsed nuclear magnetic resonance and nuclear quadrupole resonance in zero magnetic field.

Construction Begins on New Surface Science and Catalysis Laboratory

Construction began in late April 1985 on the new Surface Science and Catalysis Laboratory (SSCL). The SSCL will be the first building built for the Center for Advanced Materials (CAM), as well as the first new building built at LBL for 20 years. Ground was broken officially on October 22, 1984, when the symbolic golden shovels, manned by LBL Director and MMRD investigator **David Shirley**, Acting CAM Director and MMRD investigator **Anthony G. Evans**, and H. Lee Halterman, District Counsel for Congressman Ronald Dellums, were used to turn the first soil. Since the groundbreaking ceremony, the slope below the future building has been prepared and bids have been taken, with foundation work begun by the end of April.

Professor **Glenn Seaborg** recently received the Great Swedish Heritage Award at Seattle's Great Swedish Heritage biennial banquet. The award included an Orrefors plate with an inscription honoring Seaborg for his scientific and public-service achievements.

Two MMRD investigators are among the six new members of the Laboratory Staff Committee. They are Professor **Neil Bartlett**, who was appointed as Chair, and Dr. **Norman Edelstein**, who was appointed as an at-large member.

Two MMRD investigators were featured in the February 22, 1985 issue of *Science*: **Gabor A. Somorjai**, with his article "Surface Science and Catalysis," and **Brad Moore**, with his article "Understanding Molecular Dynamics Quantum-State by Quantum-State." Both articles were featured in a special section of the magazine, which included the "Pimentel Report," a report identifying prime areas for chemistry research.

Three MMRD investigators — **Carson Jeffries**, **Joseph Humphrey**, and **William Miller** — were speakers at the First Inaugural Conference of the Berkeley Research Group in Nonlinear Systems and Dynamics. The conference was held on January 7 and 8, 1985, on the UC campus.

MMRD Investigator **Lutgard De Jonghe** was named a Fellow of the American Ceramic Society at the ACS annual meeting held in Cincinnati May 5-9.

Phillips, Searcy Honored at Reception

Professor **Norman Phillips**, the new MMRD Division Head, and Professor **Alan Searcy**, the former MMRD Head, were honored at a reception in the Building 62 conference room on November 19, 1984.

MMRD Holds Annual Review

The 1985 MMRD Annual Review Symposium was held on February 28 and March 1, 1985. MMRD Head **Norman E. Phillips** and LBL Deputy Director **Gerd M. Rosenblatt** offered the Welcome and Introduction on February 28; Acting MMRD Head **Rolf Muller** served as Chairman on March 1. Featured speakers included the following MMRD investigators, with the titles of their presentations in parentheses: **Alexis T. Bell** (CO Hydrogenation Over Group VIII Metals: New Insights Regarding the Control of Product Selectivity); **Richard J. Saykally** (Ultrasensitive High-Resolution Laser Spectroscopy of Unstable Molecules); **David H. Templeton** (Crystal Structures of Lanthanide and Actinide Compounds); **Ronald Gronsky** (Direct Imaging of Atoms at Interfaces); **Paul L. Richards** (Far-Infrared Spectroscopy); **John Clarke** (Flicker (1/f) Noise in Copper Films Irradiated with 500-keV Electrons: A New Tool for the Study of Defects in Metals); **Leo M. Falicov** (Electronic and Magnetic

Properties of Transition-Metal Surfaces, Interfaces, and Overlayers); **Donald R. Olander** (Laser Vaporization of Refractory Solids); **Alexander Pines** (New Developments in Solid-State NMR); **Iain Finnie** (Abrasive, Erosive, and Sliding Wear); **J. William Morris, Jr.** (Elastic Effects on Precipitation Reactions in Solids); **Philip N. Ross** (The Surface Chemistry of $TiPt_3$ and the Relation to SMSI Effects); and **Heinz Heinemann** (Gasification of Graphite). This year's outside investigators were Dr. James Phillips, AT&T Bell Laboratories, who served as Chair; Professor William Chupka, Department of Chemistry, Yale University; Professor Alan Ardell, Chair, Materials Science and Engineering Department, UCLA; Professor John Bearcaw, Chemistry Department, California Institute of Technology; Dr. Richard Claassen, Vice President, Livermore Programs, Sandia National Laboratories (Livermore); and Dr. Adam Heller, Head, Electronic Materials Research, AT&T Bell Laboratories.

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