

SPECIAL ELECTION ISSUE

MRS BULLETIN

Materials Research Society Vol. VIII No. 4 July/August 1983

CANDIDATES FOR THE LEADERSHIP

Officers, Councillors on the ballot

Vice presidents of the Materials Research Society, and five members of the 15-member governing council, will be elected in balloting being carried out through this issue of the *Bulletin*.

Again this year, we are using the newsletter to carry out the election because it can convey information about the candidates as well as print the ballot. We must repeat, therefore, that this is the only election material you will receive. Please read this issue carefully before marking your ballot and returning it to the Society's Secretariat.

Offices to be Filled

According to MRS by-laws, the Society's president is not elected directly; rather the First Vice President automatically assumes the presidency at the end of his or her one-year term. Thus the highest office to be filled in this election is that of First Vice President.

Slated for the First Vice Presidency for 1984 by the Society's Nominating Committee is Elton N. Kaufmann of Lawrence Livermore National Laboratory, this year's Second Vice President. Long active in the MRS's leadership, Elton's present service has been outstanding and he is unopposed for the position. However, space has been provided on the Official Ballot for

NOTE

In this issue of the Bulletin you will find information about the candidates for election to the Society's leadership. Also published within is the Official Ballot.

This is the only ballot you will receive.

Evaluate the candidates and vote your ballot according to the instructions that accompany it.

Return the ballot by Aug. 31 to Ernest Hawk, Executive Secretary, MRS, 110 Materials Research Laboratory, University Park, PA 16802.

This is the only notice of election you will receive. Please don't fail to vote.

write ins.

The other office filled every year is

that of Second Vice President. In a departure from past practice - and evidence of the Society's growth and diversity - the Nominating Committee is putting forward the names of two of its most committed and talented workers, rather than slating a single candidate. They are Gordon E. Pike of Sandia National Laboratories and Bill R. Appleton of Oak Ridge National Laboratory. Each has capped a succession of services to the Society by serving as co-chairman of this year's Annual Meeting in Boston, along with Bernard H. Kear of Exxon.

Similarly, the Nominating Committee has offered the names of nine energetic materials scientists for consideration to fill five vacancies on the Society's governing council. Each year a third of the council's 15 members are elected. They are profiled in the following pages.

Election Rules

One vote may be cast for each of the officer positions to be filled. In the case of council members, a ranking system is used to eliminate the possibility of ties. The candidates are presented in an order determined by random number selection. Each is to be ranked from one to nine with no "tie" numbers

[Continued on Page 7]



ORGANIZERS of the MRS - Europe conference on laser - solid interactions and others appear before the opening session of the group's recent meeting in Strasbourg. They are (left to right) P. Siffert, CNRS, Strasbourg; P. Pinard, INSA, Lyon; M. Hanus, CNRS, Paris; M. Camus, Director of the CNET, Grenoble; C.W. White, MRS First Vice President, and V.T. Nguyen, CNET, Grenoble.

FIRST MRS - EUROPE MEETING

A successful conference and the birth of a new MRS unit

The first meeting of the Materials Research Society - Europe was held in Strasbourg, France, May 25 - 27. The meeting, entitled *Laser-Solid Interactions and Transient Thermal Processing of Materials*, was organized by European members of the MRS under the Society's sponsorship. The Society was represented by First Vice President C.W. White, and Woody's report follows:

MORE THAN A HUNDRED technical papers were presented by half again as many scientists at the Strasbourg meeting, and it was an outstanding success. My colleagues and I were in the hands of three extremely energetic organizers - P. Siffert of the Centre de Recherches Nucleaires, P. Pinard of Lyon's INSA, and V.T. Nguyen of CNET in Grenoble. If attendance was evidence

of the wide interest in this subject in Europe, the success of the meeting was more attributable to their enthusiasm and diligence.

Throughout the meeting many discussions were held concerning the future of a European affiliate of the MRS. The Council of Europe, to which 21 European nations are affiliated, was represented by D. Massue, the Director of Higher Education and Research, who expressed the Council's interest in encouraging future collaboration among European nations through MRS - Europe. Additionally, a number of the scientists who spoke to me recognized many common benefits that could be shared through such an association.

The upshot is that a steering committee, chaired by Nguyen and

Siffert, has been organized to consider an agenda for a 1984 meeting of MRS - Europe. The committee will include representatives of all the nations the group would embrace, and from most of the technical areas of interest to the membership. The remarkable success of the first meeting suggests that the new organization has a bright future.

Meanwhile our friends in Europe and we on the MRS Council have much to discuss. Interest has been expressed in an Asian association of materials scientists, and a task facing the Society is how to incorporate regional associations within the MRS in a manner that will enhance the total Society and not fragment the cooperative international, as well as interdisciplinary, approach the MRS personifies.

SOCIETY'S GREETINGS TO MRS - EUROPE

[Representing the MRS at the recent meeting of materials scientists in France was First Vice President C.W. White of Oak Ridge National Laboratory. His introductory remarks are reprinted here.]

It is a pleasure for me to attend this conference, both as a scientist and as the representative of the Materials Research Society. The topic chosen for the conference is something that has been of interest to me for the past five years, and the technical content of the meeting appears to be excellent. I commend the Organizing Committee and the Local Arrangements Committee for the work they have done in presenting such a superior technical meeting in so beautiful a location.

In my capacity as an officer of the Society it is a special privilege to attend this meeting. The Society is pleased to co-sponsor the conference. As most of you are well aware, the Materials Research Society is an international professional organization uniting the worldwide community of scientists and engineers involved with materials. Scientists from Europe have played a very important role in the evolution of the MRS, and the group's ties to Europe are very strong. Indeed, of the 25 nations represented among the Society's membership, 16 are European. Fifteen percent of total membership is from Europe. Both of the other conferences the MRS has sponsored outside the United States have been held in Europe: a session on nuclear waste management in Berlin last summer, and a meeting on phase transformations in solids in Crete this summer. The proceedings of both of these conferences are included among the Society's Conference Proceedings Series.

The interest in materials science is

worldwide. It is not limited by national, regional or geographical boundaries. The Society encourages the further development of an international organization. This will increase communication among those working in the field, increase collaboration and help in the achievement of common goals. In addition to the sponsorship of meetings in Europe, the Society is helping to foster publication of the new journal, *Materials Letters*, which is published here and several of whose MRS-appointed Associate Editors are Europeans.

The goal of the Materials Research Society is to provide a forum for the dissemination of information on topics on the frontier of materials science. To fulfill this objective we encourage the

formation of affiliated societies with similar objectives. Particularly, we want to encourage the development of a strong MRS - Europe closely aligned with our own international Society. There are many common benefits that can be shared through such an affiliation. The formation and development of a strong MRS - Europe with meetings organized and conducted by our colleagues here is entirely consistent with our objectives. We would hope that MRS - Europe would continue to meet in future years and that the scope of future meetings would be expanded to include other topics in the forefront of materials research.

In closing, let me again thank you for the invitation to attend this conference, which promises to be very interesting and informative.



SERIOUS DISCUSSIONS about the future of MRS - Europe dominate the table at the conference banquet as Woody White (pointing) expresses the Society's strong interest in fostering a successful European affiliate

CONFERENCE IN CRETE

"I most appreciate the opportunity I had here for communication between these different fields; this was very valuable to me," Mats Hillert of Sweden's Royal Institute of Technology said of the MRS-sponsored International Conference on Phase Transformations in Solids, held in Crete June 27 - July 1. As a scientist with a theoretical background in modulated structures and a present interest in the more practical aspects of steel properties and production, he typifies the multidisciplinary scientist MRS technical meetings are intended to serve.

And, to judge from the enthusiastic reports received from the conference in Crete, participants there were well served, indeed. Some 170 scientists and engineers from 26 nations attended. They heard 33 invited and 30 contributed papers, and had access to 112 poster presentations in 12 technical and three poster sessions.

"I am overwhelmed over everything I have seen," said Jim Taylor of Rutgers, the state university of New Jersey. "I have seen a large number of absolutely fascinating geometrical structures in this conference, and it seems to me that this is a wide-open area for a lot of mathematics that have not been created yet, mathematics on minimum surfaces."

Robert Sinclair of Stanford University said, "We were seeing things in slides and posters in this conference that would have seemed inconceivable ten years ago - or maybe five years ago; things such as a field ion micrograph and electron micrograph, computer simulations from the X-ray and neutron diffraction methods and many others. The fine scale on which we are examining solids now is the most impressive point about this conference,

[Continued on Page 5]

Maleme-Chania, Crete, Greece
June 27, 1983

E.P. Velikov, Vice President
Y.A. Ovcchinnikov, Vice President
Academy of Sciences of the USSR
Moscow, USSR

Sirs:

We, the undersigned attendees at the International Conference on Phase Transformations in Solids, formally protest your refusal to permit Professor Armen Khachaturyan and his wife, Svetlana Semanovskaya-Khachaturyan, to participate in this conference.

Both are outstanding scientists in the field. Professor Khachaturyan was invited to be our keynote speaker. Their absence is deeply felt. Your action is a disservice to international science that reflects badly on your Academy.

We are distressed to learn that this action is only the most recent step in a pattern of professional harassment of the Khachaturyan family. We understand that Professor Khachaturyan has been expelled from scientific councils, that his wife has been denied the fundamental right of a scientist to publish her results, and that their son, Karen Khachaturyan, a young physicist of outstanding promise, has been expelled from Moscow University and denied the opportunity to pursue a career in science. All of this happened, we understand, in retribution for the Khachaturyan application for exit visas to join their relatives abroad, despite the fact that their right to do so is guaranteed by international agreements ratified by the Soviet Union.

We are sad to hear that the burden of this persecution has driven Professor Khachaturyan to go on a hunger strike for the duration of the conference, in company with Soviet scientific colleagues who are in a similar position. We extend our support and sympathy to him as physicists and materials scientists from many countries.

The Soviet Union has often expressed its desire to participate in the activities of international science. You must certainly realize that such participation brings obligations as well as privileges, and that the most fundamental of these obligations is to promote, rather than hinder, the international exchange of scientists and scientific information.

You must certainly understand that this action has caused serious discussions among many of us regarding the desirability of future invitations to those Soviet scientists who are permitted to travel. We urge you to use your good offices to end these restrictions on scientific discussion, and to stop this senseless persecution of outstanding scientists.

Many of us have known Professor Khachaturyan well for many years. We know that he has not engaged in research of a classified or defense nature, and we therefore cannot understand the reluctance of the Soviet Government to permit the Khachaturyan family to join their relatives abroad. We further urge you to recommend reconsideration of their applications for exit visas.

[There follow the signatures of 103 scientists.]

SHORT-COURSE INSTRUCTORS

*The scientists who will teach short courses
in liquid phase epitaxy, surface analysis and ion implantation*

A distinguished group of scientists, including a Von Hippel Award winner, have consented to teach a total of three short course at this November's Annual Meeting in Boston.

Surface Analysis

The short course on surface analysis techniques, which will present the conceptual and practical aspects of modern surface and thin film analysis, will be taught by Len Feldman of Bell Labs and Jim Mayer of Cornell.

LEONARD C. FELDMAN received his Ph.D. from Rutgers in 1967. Since then he has been a Member of the Technical Staff of Bell Laboratories, except for a one-year leave of absence at Aarhus University in Denmark. Throughout his scientific career he has been active in education: he is an instructor in Bell Labs' "In-hours" education program, and at Drew University and Cornell. His publications include a book, *Materials*

Analysis by Ion Channeling, with J.W. Mayer and S.T. Picraux, and numerous articles on materials science-related subjects. His most recent research interests include the structure and analysis of surfaces and interfaces and their interrelationship. He is a Fellow of the American Physical Society and a recipient of Bell Labs' Distinguished Technical Staff Award. Moreover, it was Len who, as Chairman of the Society's Education Committee, organized the expansion of the short-course element of the Annual Meeting, which began as an experiment with a single course last year and promises to grow further in coming years.

JAMES W. MAYER is Bard Professor of Materials Science at Cornell University. In 1981 he was honored with the MRS's most prestigious prize, the Von Hippel

[Continued on Page 6]



JIM MAYER

CRETE

[Continued from Page 4]

and I think that will lead to a deeper understanding of the problems which still remain."

Conference organizer Tom Tsakalakos of Rutgers said, "This uncommon gathering of scientists assured a uniform representation of all aspects of phase transformations and provides the basis for future collaboration between groups that traditionally have not established contacts before." Tsakalakos also pointed out that the location attracted a broadly international group.

Soviet Couldn't Attend

Sadly, the meeting's keynote speaker, Armen Khachaturyan, and his wife

were refused permission by their government to attend. In a dramatic letter smuggled out of the Soviet Union and published in the last issue of the *Bulletin*, the scientist revealed that he is a refusenik, who has been denied permission to emigrate and subjected to various forms of harassment for seeking to do so. He told conference organizers he would participate in a hunger strike during the session's length. This led a score of those attending the conference to observe a limited fast in sympathy with Khachaturyan's plight. Also, a substantial majority of those who attended the meeting signed a letter of protest that was dispatched to the Soviet Academy of Science. [That letter is reprinted in these pages.]

SHORT-COURSE INSTRUCTORS

[Continued from Page 5]

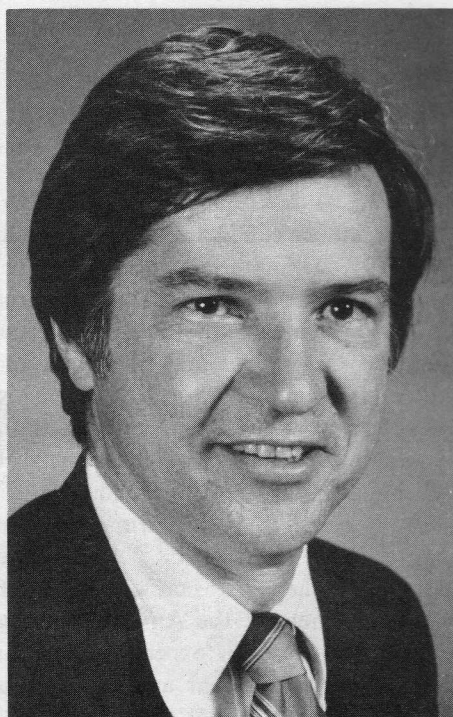
Award, for his outstanding lifelong contributions to materials science. He received his Ph.D. in physics from Purdue in 1960, and worked until 1967 at Hughes Research Laboratories. He then joined Caltech in the Electrical Engineering Department, where he was an instructor, while at the same time teaching scuba diving and serving as Master of Student Houses. He has been at Cornell since 1980. He has published more than 300 papers, co-authored three books, and co-edited three others.

Ion Implantation.

The course entitled Ion Implantation: Principles and Practices will cover the fundamental techniques of ion implantation, the application of this technique to semiconductor and non-semiconductor materials, and the practical aspects of ion implantation equipment. The instructors are Jim Hirvonen and Tom Seidel.

J.K. HIRVONEN is vice president and technical director of Zymet, Inc., a concern founded to develop and build ion implantation equipment for non-semiconductor applications. Before that he was head of the ion implantation section of the radiation technology division of the Naval Research Laboratory, which he joined in 1971 after getting his Ph.D. in physics from Rutgers. A member of the Boehmische Physical Society, Jim has organized several symposia on ion beam modification of materials, edited two books on that subject, and authored more than 45 scientific papers.

T.E. SEIDEL received his Ph.D. from Stevens Institute of Technology in physics in 1965. The following year he joined Bell Laboratories in Murray Hill, NJ, where he worked on ion implantation technology, IMPATT microwave source devices, gettering effects and bipolar and CMOS technologies. In 1977 he held a



TOM SEIDEL

teaching-research position at Caltech's applied physics E.E. department. From 1980 through 1982 he served as CMOS technology supervisor at Bell Labs in Allentown, PA. Presently he is doing exploratory development in VLSI technology at Murray Hill. The author of some 50 publications and the holder of six patents, Tom is a member of ECS, IEEE and the Boehmische Society.

Liquid Phase Epitaxy

The course on liquid phase epitaxy techniques is being offered for the second year, after its initial foray at last year's Annual Meeting proved so popular the concept was expanded. The man behind the successful course is Ralph Dawson.

L. RALPH DAWSON has been engaged in the growth of compound semiconductor material for 18 years. He earned his B.S. at the California Institute of Technology and his M.S. and Ph.D. at the University of Southern California. He spent eight

years at Bell Laboratories and is now involved in materials research at Sandia National Laboratories. He has used the LPE technique for the growth of a wide range of III-V compounds, including GaAs, AlGaAs, GaP, InP and GaSb, for a broad range of device applications, including Gunn devices, light emitting diodes, field effect and bipolar transistors, impatts, lasers and optical detectors. Currently, he is concentrating on the MBE growth of strained-layer superlattices in the InGaAs system. He is a member of the American Association for Crystal Growth, the Electronic Materials Committee and the GaAs Symposium Committee, as well as the MRS. He has authored 37 papers and holds two patents.

MRS BULLETIN

VOLUME VIII NUMBER 4

The Materials Research Society Bulletin is published bi-monthly by the Materials Research Society for its members and others interested in materials science. Correspondence and submissions are invited. They should be brief and typewritten (double-spaced), and the author's affiliation must be indicated. Address all material to the Editor.

President
H.J. LEAMY
Bell Laboratories
First Vice President
C.W. WHITE
Oak Ridge National Laboratory
Second Vice President
E.N. KAUFMANN
Lawrence Livermore Laboratory
Secretary
R.L. SCHWOEBEL
Sandia National Laboratory
Treasurer
K.C. TAYLOR
GM Research Laboratories

Editor
T.G. MIDDLETON
P.O. Box K
Short Hills, NJ 07078
(201) 467-0504

CANDIDATES FOR THE LEADERSHIP

[Continued from Page 1]

and "one" being the most highly ranked.

Ballots must be received no later than Aug. 31 in University Park, PA. Please allow sufficient time for postal delivery.

For 1st Vice President

ELTON N. KAUFMANN

Lawrence Livermore National
Laboratory
P.O. Box 808, L-217
Livermore, CA 94550
(415) 423-2640

Elton Kaufmann joined the Materials Science Division of Lawrence Livermore National Laboratory in 1981. Presently he is studying the application of directed energy processing methods to materials.

Elton earned his BS in 1964 from Rensselaer Polytechnic Institute and completed his Ph.D. in 1968 at the California Institute of Technology. Both degrees are in physics. From 1968 through 1981 he was a member of the technical staff of Bell Laboratories, where he studied materials properties using hyperfine interactions, ion-solid interactions and laser-solid interaction techniques. He is editor of *Hyperfine Interactions* and two books, and author of more than 80 technical articles. In 1980, he co-chaired the MRS Symposium on Nuclear and Electron Resonance Spectroscopies Applied to Materials Science. In 1982, he co-chaired the Annual Meeting in Boston. Presently, he is the Society's Second Vice President.

"The MRS is experiencing rapid growth in several areas," Kaufmann notes. "A new spring meeting in the Western U.S. is in place. A new and expanded Society headquarters is in the offing. The skeleton of an international MRS has been built. Member services have expanded, notably an expansion of



ELTON KAUFMANN

the *Bulletin* and association with the new journal, *Materials Letters*. Short course offerings have become a standard meeting complement. The ranks of MRS corporate affiliates are swelling. And, soon, equipment exhibits will likely be available to our members and other participants at our meetings. This expansion is a direct response to demand from members and meeting attendees, who clearly feel the MRS is playing a valuable role in their participation in the materials research community.

"I attribute this success both to the interdisciplinary nature of our forums, which so well emulates the way materials science is pursued in the real world, and to the flexible and innovative methods of meeting and program formulation, which have allowed rapid response to changing research emphasis and opportunities for individual initiative in shaping the

direction of the Society. The challenge now is the maintenance and nurturing of those attributes during the Society's growth as an institution.

"As an officer of the MRS, I regard my primary responsibility as insuring the availability of the appropriate implements and atmosphere to guarantee technically excellent and exciting meetings, while using the Society's resources in the most efficient manner possible. If elected First Vice President, I will continue to pursue that course while helping the MRS grow in areas where the demand warrants."

DON'T NEGLECT TO VOTE

For 2nd Vice President

GORDON E. PIKE

Sandia National Laboratories
Division 1815
Albuquerque, NM 87185
(505) 844-9168

Gordon was graduated from Carnegie Mellon University in 1963 with a B.S. in physics. He received his Ph.D. in solid state physics from the University of Pittsburgh in 1969. That year he joined Sandia National Laboratories, where he has worked in the general area of electrical properties of materials. He has made experimental and theoretical contributions in the fields of electronic hopping transport in insulators, superconductivity, radiation

[Continued on Page 8]

CANDIDATES



GORDON PIKE

[Continued from Page 7]

effects in MOSFET transistors, percolative conduction in heterogeneous materials and the electronic properties of semiconductor grain boundaries.

For the Materials Research Society he has served as co-chairman for the Grain Boundaries in Semiconductors symposium at the 1981 Annual Meeting, and currently is serving as program co-chairman for this year's Boston meeting and for the newly instituted 1984 spring meeting in Albuquerque. He is also a member of the American Physical Society and the American Ceramic Society.

"The major issues facing the MRS in the near future all arise from the successful growth of the Society," he says. "International participation in the meetings has been increasing steadily, and there is a need to include the Europeans and the Japanese more directly in the programming of meeting

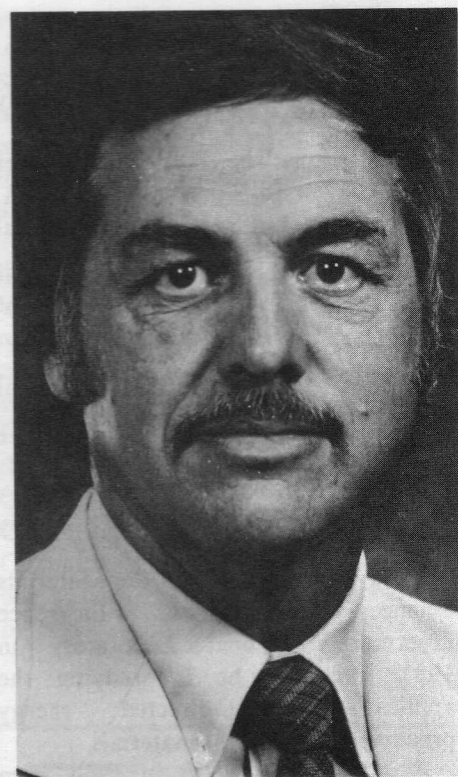
topics. Co-chairmen from abroad or steering committees with an international membership would be useful for this. An MRS-Europe is being formed, and we must cooperate with them to ensure continued European input at our symposia, and to prevent duplication of symposia topics. Part of this could be handled by co-sponsoring meetings, and possibly by alternating meeting sites.

"Two other areas of attention involve funding - of the Society and of the individual symposia. The increased activities of the Society, such as the spring meeting and the affiliation with *Materials Letters*, has intensified the need for a proper headquarters rather than the Secretariat arrangement which has evolved from the time when the MRS was younger. This will be more costly. Also, for the symposia we find that while federal agencies are often anxious to fund new and promising fields of research, they are sometimes reluctant to contribute to the successful, repeating symposia. Additional contributions from Corporate Affiliates have helped both the Society and the symposia, and this program should be expanded."

BILL R. APPLETON

Solid State Division Oak Ridge National Laboratory P.O. Box X Oak Ridge, TN 37830 (615) 574-6283

Bill is a Section Head in the Solid State Division at Oak Ridge, where he directs and performs research into fundamental ion-solid interactions, ion implantation doping and the use of ion beam and laser processing for the alteration and analysis of materials. He received his Ph.D. from Rutgers University, worked at Bell Laboratories



BILL APPLETON

in Murray Hill, NJ, for two years, and joined Oak Ridge in 1969. He has published more than 125 journal articles, reviews and book chapters, is a Fellow of the American Physical Society and a member of APS, AAAS, SESAPA, Bohmische Physikalische Gesellschaft, as well as the MRS.

He has served the Materials Research Society as a symposium chairman (Laser Processing); is a member of the Nominating, Corporate Affiliate and Program Committees, and is one of this year's meeting chairmen. He serves on several journal editorial boards and national and international committees serving materials science.

Bill tells the *Bulletin*, "I feel that the major challenges and opportunities

MAIL YOUR BALLOT TODAY

CANDIDATES

facing the MRS are associated with its present success and projected rapid growth. Expansion of the Society to include regional meetings and foreign affiliates needs to be carefully charted to provide maximum benefits to the profession and to the membership. The financial base of the Society needs to be expanded through grants, foundation funds, industrial affiliations and educational courses to reduce our dependence on agency funding. Acquisition and retention of members and Corporate Affiliates need to be pursued vigorously.

"In general, the Society should continue comprehensive, long-range planning, keeping in mind that our primary responsibilities are to serve the educational and publication needs of our members and to establish a representative voice in materials science."

For Councillor

ROBERT K. MACCRONE
Professor of Materials Science



ROBERT MACCRONE

Department of Materials Engineering
School of Engineering
Rensselaer Polytechnic Institute
Troy, NY 12181
(518) 266-6449

Bob took degrees in physics and mathematics from South Africa's University of the Witwatersrand, and his Ph.D. in physics from Oxford. He came to the United States in 1960 as a Post-doctoral Associate at the University of Pennsylvania, where he subsequently was appointed to the faculty. He moved to Rensselaer in 1967, rising to his present Professorship in 1974.

He has published papers on the ionosphere, fatigue at low temperatures and following ion implantation, X-ray topography, bound polarons, excess vibrational modes in glasses, electrical magnetic, optical, EPR, Mossbauer studies of transition metal ions in oxide glasses, spinodal decomposition and crystallization, and SAXS. His present research includes studies of spin glasses prepared by sol-gel, oxidation mechanisms of Ni and Ti, anomalous properties of pressure-quenched LdS, and plasma-assisted CVD.

"I like the MRS for many reasons," he says. "The symposia and proceedings are the extraordinary result of the focussed attention of members from different specialized approaches. Such input to a topic from different directions is perhaps the essence of materials research. I would like to see these symposia continue, with subject matter largely following the interests of the members. Presently I am particularly partial to "materials engineering:" modulated structures, structures produced by phase separation, chemical modification of polymeric systems and so on. MRS sponsorship of symposia at times and places different from the Annual Meeting in Boston seems to be an excellent recent addition.

"In addition to promoting basic

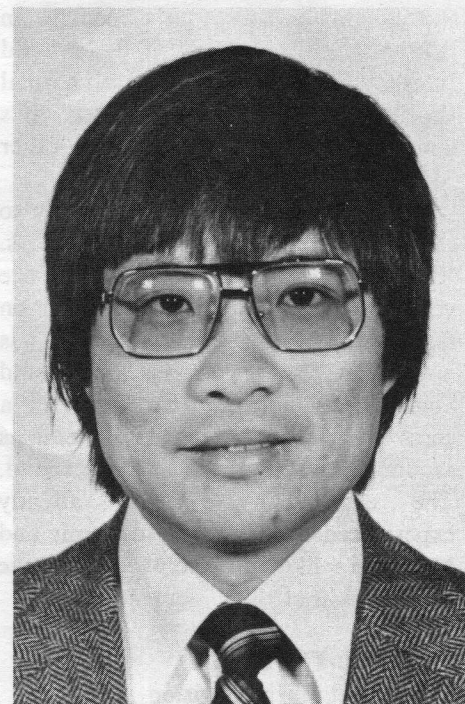
research, I believe the Society should provide a forum for national concerns. Such comprehensive discussions would be particularly valuable because of the broad spectrum of our members' disciplines. Chemical pollution and acid rain seem prime candidates from a host of topics.

"In these times of rapid developments, the MRS should continue with well-planned tutorial activity for the benefit of its members. One form this could take is some emphasis on review papers in symposia.

"Finally, I would like to see discussion within the MRS on the possible value of 'industrial' interactions, and what should be done to encourage student participation and the formation of local chapters."

JOHN C.C. FAN
Electronic Materials Group
Lincoln Laboratory
Massachusetts Institute of Technology
244 Wood Street

[Continued on Page 10]



JOHN FAN

CANDIDATES

[Continued from Page 9]

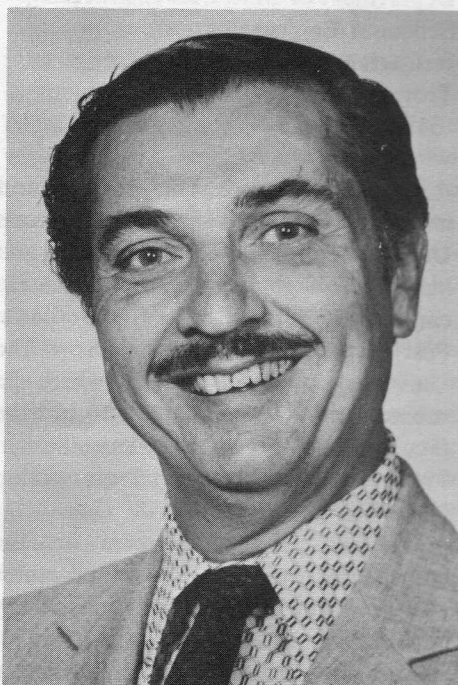
Lexington, MA 02173
(617) 863-5500

John received his B.S. degree in 1966 from the Department of Electrical Engineering at the University of California at Berkeley, and his M.S. and Ph.D. in applied physics at Harvard University in 1972. Since 1972 he has been working at the Lincoln Laboratory, where he is Assistant Leader of the Electronic Materials Group. He is the author or co-author of more than 100 publications in the fields of thin films and crystals of semiconductors, solar cells and solid state electronic and optical materials and devices. He is on the editorial boards of *Solar Cells* and *Applied Physics Communications*, and is a member-at-large of the Executive Committee of the Electronics Division of the Electrochemical Society.

For the MRS, John is a member of the Corporate Affiliates Committee, an Associate Editor of the new journal, *Materials Letters*, and co-chairman of the meeting at this year's conclave in Boston on Energy Beam-Solid Interactions and Transient Thermal Processing. He has given invited talks and chaired sessions at many other MRS symposia.

"I would welcome the opportunity to serve on the MRS Council," John says. "Obviously my research interests are very strong, and the Society's focus on research is what attracted me and has maintained my enthusiasm. I would hope as a Councillor to help foster a core of excellent technical meetings around which the MRS can expand. The expansion we have already experienced has been very dynamic and I would like to help direct the continuation of this process."

LOUIS R. TESTARDI
Chief, Metallurgy Division
National Bureau of Standards



LOUIS TESTARDI

U.S. Department of Commerce
Washington, DC 20234
(301) 921-2811

Louis took his B.S. from the University of California, did graduate study at the University of Rome and was awarded his Ph.D. by the University of Pennsylvania in 1963. He became a member of the technical staff at Bell Laboratories, and while there was for a year a visiting professor at Princeton University. He left Bell in 1980 to join the Materials Processing in Space Program of the National Aeronautic and Space Administration, and after two years joined the National Bureau of Standards. He has some 95 publications and two patents, and is a Fellow of the American Physical Society.

Among his research interests are structural instabilities, high temperature superconductivity, new thin-film phases and compositionally modulated structures, defects in solids, ultrasonics, pressure, optical, magnetic and transport properties of bulk metals,

semiconductors and glasses, and thin films.

"Government - industry relations in the United States have traditionally been adversarial and legally encumbered. Among the consequences of this for materials scientists is the difficulty of coupling the vast resources of government-sponsored research with the technical challenge of industrial problems.

"The Materials Research Society," he says, "with the approval of its membership should advocate the benefits of this collaboration for the health of the economy and the sciences in America. Our effort must be focused.

"One possibility might be a government-industry sponsored center where the modern techniques of materials and process testing and characterization can be developed and made available, particularly to small businesses and low-technology concerns."

RICHARD M. OSGOOD JR.
Department of Electrical Engineering
Columbia Radiation Laboratory
Columbia University
New York, NY 10027
(212) 280-4462

Dick is Professor of Electrical Engineering and Applied Physics at Columbia. Prior to this appointment he served on the scientific staff at MIT Lincoln Laboratory, the Air Force's Avionics Laboratory, and the Materials Laboratory of the Air Force. He received his Ph.D. in physics from MIT, his M.S. in physics from Ohio State and his B.S. in engineering from the U.S. Military Academy. During his career his research has been centered on electrical engineering, physical chemistry and optical physics. His most extensive research has been in the development of new infrared and ultraviolet lasers, the application of laser induced chemistry to materials

CANDIDATES

preparation and the study of molecular kinetics and spectroscopy.

A member of the IEEE, ACS and OSA in addition to the MRS, Dick is co-editor of *Applied Physics* and associate editor of the *Journal of Quantum Electronics*. With S.R.J. Brueck, he organized the first MRS symposium on Laser Diagnostics and Photochemical Processing. He has served as a consultant to numerous government and industrial organizations, including serving as a member of the ad hoc ERAB Committee on Advanced Uranium Isotope Separation.

"Modern materials research is necessarily interdisciplinary," he says, "and owes much of its vitality and interest to addressing specific problems in government and industry. The 'symposia' format of the MRS allows the flexibility of exploring in detail specific applications or materials problems. A major challenge to the MRS is to retain the vitality of its established symposia. I would urge



RICHARD OSGOOD

that a major effort be made to reorient each symposium after three years of operation. In addition, each symposium should be encouraged to keep a tight format.

"A second difficulty is the escalating cost of conferences. This problem can be alleviated by: 1) a more judicious choice of conference sites - for example, the spring Albuquerque site next year, and 2) contingent on a vote of the membership, allowing a conference equipment exhibition."

SUBHASH MAHAJAN

Department of Metallurgical Engineering and Materials Science
Carnegie-Mellon University
Pittsburgh, PA
(412) 578-2000

After obtaining his B.S. from Panjab University and B.E. from the Indian Institute of Science with highest honors, Subhash took his Ph.D. from the University of California at Berkeley. His first appointment was with the University of Denver, where he investigated the strengthening effects of shock waves on metals and alloys. In 1968 he joined the Atomic Energy Research Establishment at Harwell, England, as a Harwell Fellow. During his stay there he did research on the nucleation and growth of deformation twins in B.C.C. crystals and their role in the nucleation of fracture. In 1971, he joined Bell Laboratories, where the central theme of his research has been to establish the correlations between structure and properties in materials. More recently he has been involved in understanding the interrelationships between substructure and growth parameters in III-V compound semiconductors. Effective Sept. 1, he is joining Carnegie-Mellon University.

He is a member of AIME, the Electrochemical Society, Sigma Xi and the New York Academy of Sciences. For the MRS, he was involved in the organization of the Defects in Semiconductors symposium at the 1982

Annual Meeting.

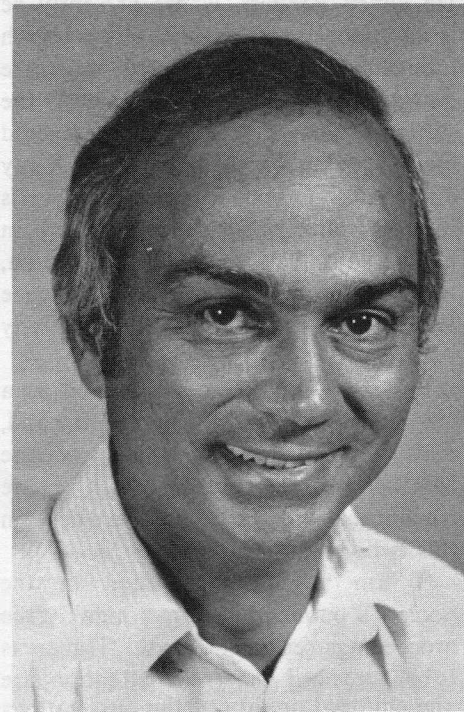
"I feel the MRS needs to broaden its membership base," he says. "One of the most effective ways to achieve this would be to foster MRS chapters at universities active in interdisciplinary materials research. The first such chapter [at UCLA] was established last year. A continuing emphasis on this program will not only expose students to the goals of the Society, but will also stimulate their participation in its activities."

THOMAS TSAKALAKOS

Department of Mechanics and Materials Science
College of Engineering
Rutgers University
P.O. Box 909
Piscataway, NJ 08854
(201) 932-3666

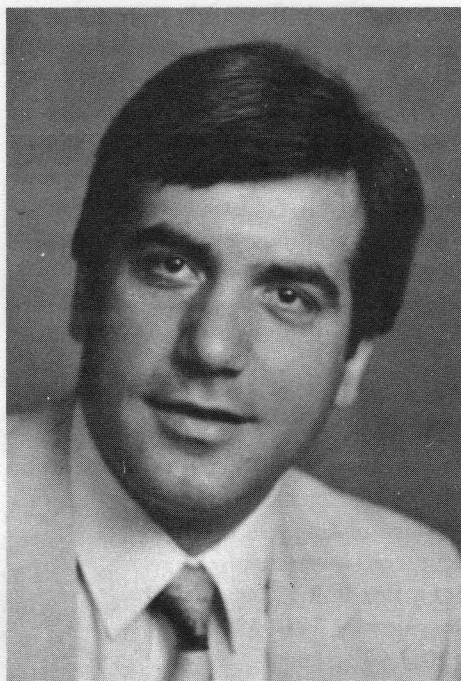
Tom received his B.S. in physics from the University of Athens and his Ph.D. from Northwestern University.

[Continued on Page 12]



SUBHASH MAHAJAN

CANDIDATES



TOM TSAKALAKOS

[Continued from Page 11]

He joined Rutgers, where presently he is an Associate Professor. His research interests include modulated structure materials, phase transformations, the supermodulus effect, artificial layered metallic films, spinodal alloys, X-ray diffraction methods and corrosion. His work on the 'supermodulus effect in bulk alloys has received recognition, including the National Science Foundation's Research Creativity Award.

For the MRS, Tom has served as a member of the Finance Committee and, most recently, as chairman of the MRS-sponsored conference on phase transformations [reported elsewhere in this issue of the *Bulletin*].

"I am strongly interested in the Society's publications, most notably the proceedings series," he says. "The areas I believe need the most attention are the editorial quality of the publications, their cost and their promotion. The topics of the MRS proceedings series

represent the state-of-the-art of science and technology, particularly in the high technology areas. I feel this is the most important issue confronting the Society today.

"Another issue the MRS should address is its expansion to include the European and Japanese communities in materials science, and the form this expansion should take. At the meeting I recently chaired in Crete, there was a general consensus these links should be forged."

FRANKLIN D. LEMKEY

Senior Consulting Scientist
Materials Technology
United Technologies Research Center
East Hartford, CT 06108
(203) 727-7318

Frank has spent his entire career with United Technologies, which he joined in 1960 after taking his B.S. in metallurgical engineering from the University of Michigan. He did graduate work in solid state physics at Trinity College and in materials science at the University of Connecticut, taking his Ph.D. from Oxford University. Presently Principal Scientist in the Metallurgy Group, he directs research on melt grown metallic and ceramic composites for high temperature and low temperature structural and nonstructural applications. He also directs research in high strength electrical conductor alloy development and mechanical testing techniques as an aid in failure analysis and alloy optimization.

Frank was a co-chairman of the first Conference on In-Situ Composites, held in 1972. He was co-editor of the proceedings of the second conference, in 1975, and organized the third one in 1978. It was in that year that his enthusiasm for the youthful MRS led him to seek - successfully - election to the Council. Between times his interests have ranged from serving as a participant in the NAS/NSF U.S.-

Japan Cooperative Science Program to a year as adjunct professor of engineering at Dartmouth College.

"The challenges confronting the Society in the Eighties are much different than those we faced during the years of rapid growth in the Seventies where operational, financial and identity concerns were successfully met," he says. "They center now on sustaining the quality, relevance and technical exchange recognized as being unique to the materials community through the sponsorship of interdisciplinary symposia. Early and broad dissemination of basic materials research findings and future trends to the ever-expanding materials community through meetings and publications requires not only dedicated symposia chairpersons but a vital professional society organization. This organization must administer the defined objectives of the MRS together with the current, more centralized assistance of AIP. "Longer-range



FRANK LEMKEY

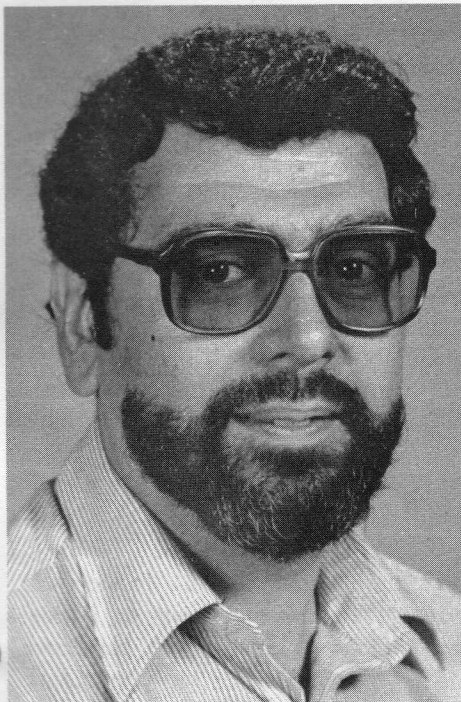
CANDIDATES

issues concerning international growth, private and public funding and integration with other sub-critical national and international conferences in materials technologies will confront the Society in the Eighties. I favor a steady expansion of meeting interaction and resulting publications based on both the personal and financial commitments expressed by the members of the Society and the organizations they represent. The MRS must strive to convince the materials community that its mission and meetings involving the multidisciplinary efforts of professional scientists and engineers brings the best results."

LEONARD C. FELDMAN

Bell Laboratories
600 Mountain Avenue
Murray Hill, NJ 07974
(201) 582-5470

Len is Supervisor of the Materials Interface Characterization Group at Bell Labs, where his 16-year career has



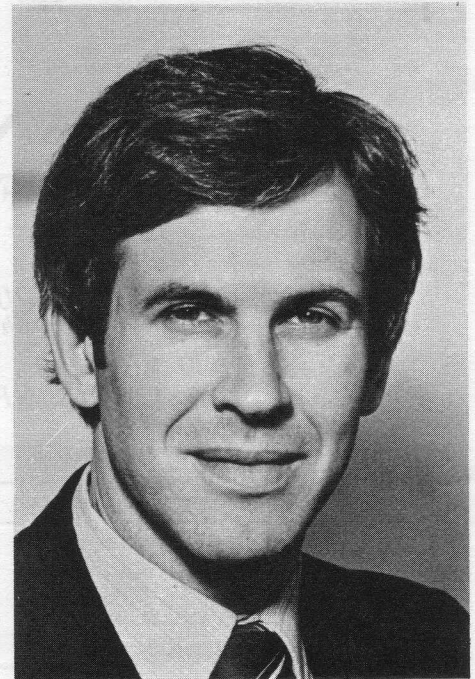
LEONARD FELDMAN

encompassed research in the areas of surface and interface physics, and materials modification and analysis using ion beams and atomic collisions in solids. He developed the use of energetic ion beam scattering for detailed structural characterization of surfaces and solid/solid interfaces. The major theme of his research recently has been the relationship between surface structure and the initial stages of epitaxial growth. Educated at Drew University and Rutgers, where he took his Ph.D., Len is organizer and instructor in the MRS short-course program, and Chairman of the MRS Education Committee. "The quality of education has piqued the interest of people in this country and it ought to be piquing the interest of the MRS," he says.

"This Society (and others) has a massive job in materials science education. We have already started in the traditional sense by providing short courses on particular technical subjects. There is, however, a much larger effort required in the non-technical community. How many laymen could define the sphere of activities of a materials scientist, as opposed to a chemist or physicist? Could a non-technical person recite a recent success of materials science? And this is only one community we must educate.

"There is work to be done in the more formal framework of undergraduate and graduate education. Does an aspiring young scientist consider materials science as one of the choices available; how many enter the field by default? The Society is considering a graduate thesis prize; this is one way of making our subject better known in academia, but more needs to be done.

"There is also the job of educating our fellow physical scientists. Are the areas of overlap between them and ourselves properly recognized and exploited? Are they aware of our



LINN HOBBS

interests and expertise? The mere existence of this Society, its excellent symposia and its ever expanding role is helpful, but more interaction is necessary.

"Finally, there is the task of educating ourselves. Materials science is a broad area with various sub-specialties. Are we doing an adequate job of opening the Society to all of materials science, making sure each sub-field is properly presented and, occasionally, highlighted - thus increasing the benefits that are derived from scientific communication? We have made some small steps through the Society and its broadening range of activities; however, more can be done. This has to be one of the main concerns of the MRS in the coming years."

LINN W. HOBBS

Professor of Materials Science
Department of Materials Science and Engineering

[Continued on Page 16]

**MATERIALS
RESEARCH
SOCIETY**

**ANNUAL ELECTION
OF OFFICERS AND COUNCILLORS**

VOTING INSTRUCTIONS: *For Officers of the Society - vote for one person for each position; for Councillors, rank each candidate from one to nine with no ties votes and (one) being the highest vote. Five councillors will be elected.*

First Vice President/President Elect

Elton N. Kaufmann _____

Second Vice President

Gordon E. Pike _____
Bill R. Appleton _____

Councillor

Robert K. MacCrone _____
John C.C. Fan _____
Louis R. Testardi _____
Richard M. Osgood _____
Subhash Mahajan _____
Thomas Tsakalacos _____
Franklin D. Lemkey _____
Leonard C. Feldman _____
Linn W. Hobbs _____

Complete Ballot and Mail to Arrive no Later Than August 31 to:
Ernest Hawk
Executive Secretary,
Materials Research Society
110 Materials Research Laboratory, University Park, PA 16802

ON VICE PRESIDENTS

Some summer thoughts from the Society's President

These are the dog days. This is the time of year we all expect to take some time off for ourselves; to relax, restore ourselves, and enjoy our families and friends. We all look forward to this. While the arrangement for a summertime hiatus from our professional responsibilities is sometimes difficult, it is complicated in the extreme for your Society's Vice Presidents, Woody White and Elton Kaufmann, whose activities on behalf of the MRS are approaching a frantic pace, while the rest of us enjoy the summer.

Rather than simply enumerate the duties and responsibilities of the Vice Presidents, I would prefer to use a bit of space in this *Bulletin* to describe for you some behind-the-scenes activities that this pair are leading.

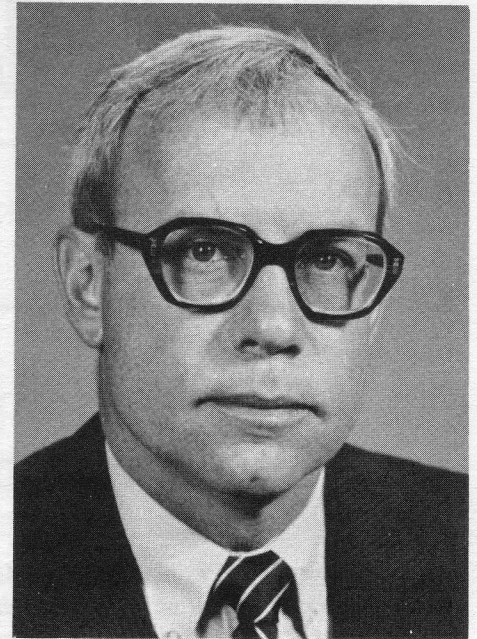
For his part, Woody is coordinating the activities of a special committee

that has been charged with making recommendations to the Council regarding the best possible arrangement for the long-term disposition of our staff function. In this pursuit, Woody has organized communications between the five committee members and has proposed and documented a good number of the options being considered. He has unquestionably captured the record for highest personal consumption of MRS stationary, and his penchant for arranging conference calls is fast becoming legendary. All this in addition to the standard committee oversight and administrative functions he handles with seeming indefatigability. And, as you will see elsewhere in these pages, Woody has spent time on our behalf assisting European members of our Society in organizing.

No less active has been Elton Kaufmann, who has himself played a major role in the activities of the White Committee. Elton, like Woody, has recently returned from an organizing foray to Europe. On his journey, he visited several materials laboratories and acquainted the scientists there not only with our activities but also with the efforts of the European community to organize an MRS affiliate. He has also taken a longer view and begun in earnest planning for our Spring - 1985 meeting in San Francisco. The groundwork for this meeting has already been done, and the plan is an extraordinarily well crafted foundation for a successful meeting.

It is a very distinct pleasure to work with colleagues as capable and committed as Woody and Elton. They make my job a lot easier. They make the Society a lot stronger.

By the same token, Woody and Elton aren't the only scientists active in the leadership of the MRS who work hard and long for the group's benefit. For example, Gordon Pike is a co-chairman not only of the coming Boston meeting, but of the Albuquerque meeting in the



HARRY LEAMY

spring. Bill Appleton is another of the Boston co-chairmen. Gordon, Bill and Bernie Kear, the third co-chairman of the Annual Meeting, are by now well aware of the incredible responsibilities that meeting imposes. No summer break for them.

Clyde Northrup, the Past President, too has invested a good part of his summer in the MRS. As Chairman of the Nominating and Awards Committees, he has overseen the election being conducted in these pages, and the process by which the Society's Von Hippel Award will be given at Boston.

Familiar as I am with the workings of the MRS, and the heavy burdens it imposes on those who choose to participate actively in it, I am nonetheless astonished and impressed by the labors of the individuals I've mentioned here, and many others I won't mention for fear of omitting someone. Collaboration with people of this calibre is reward enough for a commitment of time and energy to the MRS.

Harry Leamy
President

Nominations Open For Student Awards

Each year the Materials Research Society recognizes exceptionally successful and promising students of materials science at the Annual Meeting. Additionally, the students are given travel assistance to attend the meeting, and deliver a paper before one of its symposia.

Faculty members who can recommend such student scientists should request an application from the Society's Secretariat. The address is Ernest Hawk, Executive Secretary, Materials Research Society, 110 Materials Research Laboratory, University Park, PA 16802.

Completed applications must be received no later than Sept. 15 by the Chairman of the Nominating Committee, Past President Clyde J.M. Northrup Jr., Sandia National Laboratory, Albuquerque, NM 87185.



MATERIALS RESEARCH SOCIETY
102C Materials Research Laboratory
University Park, PA 16802

FIRST CLASS MAIL

CANDIDATES

[Continued from Page 13]

Massachusetts Institute of Technology
Cambridge, MA 02139
(617) 253-6835

Linn earned his B.S. summa cum laude from Northwestern University and his doctorate in 1972 from Oxford University, where he was a Marshall Scholar. He remained in Britain as an NSF postdoctoral fellow, Fellow of Wolfson College, Oxford. He was a section leader at AERE Harwell until 1976, when he joined the faculty of Case Western Reserve University.

Linn is a co-organizer of this year's symposium in Boston on Electron Microscopy of Materials, is a sub-editor of the *Journal of the American Ceramic Society*, and was co-organizer of the First International Conference on the Science and Technology of Zirconia. He has authored more than 60 technical papers, several book

chapters and a book. His current research interests include oxidation/sulfidation of metals, non-stoichiometry in ceramic compounds, radiation damage in ceramic and organic solids, nuclear waste isolation, intercalation of graphite, rapidly solidified ceramics and the history of several materials technologies.

"Having forged its credibility as a multidisciplinary professional society," he tells the *Bulletin*, "the MRS now faces two major didactic challenges: educating the general public about the role and the materials scientist in our society, and acquainting more science and engineering students with materials science as an established pursuit claiming a universal approach to metals, ceramics, polymers and electronic materials. It is telling, on both counts, that the recent national ranking of graduate departments in U.S. universities did not list materials science departments. The ultimate aim

of a professional Materials Research Society ought to be to produce professional materials scientists and not simply to embrace a spectrum of narrowly focused specialists. This goal requires strong and innovative direction from the Education and Long-range Planning Committees and increased emphasis on continuing professional education for MRS members in Society symposia, short course and publications."

Vote Today

Casting your vote for next year's officers and councillors is the most serious responsibility your membership in the MRS imposes. Please take the time right now to mark your ballot and return it.

The results of the election will be published in the *Bulletin* number appearing prior to the Annual Meeting in Boston.

And to the candidates - Good Luck!