

# Candidates for Society Office

The following are biographical sketches and candidacy statements of the nominated candidates for the annual election of officers for the Society. Ballots will be mailed, in January 1998, to all Voting Members of the Society. Offices not affected by this election are those of the other Vice-Presidents—Dale Hall and Carlton Osburn, and that of Secretary—Robin Susko.

## Candidate for President



Gerard M. Blom is a Research Department Head at Philips Research in Briarcliff Manor, New York, responsible for lighting and projection display systems. His research interests

have included liquid-phase epitaxy (LPE), vapor-phase epitaxy (VPE), and Czochralski growth of III-V compound semiconductors, research on light emitting diodes (LEDs) and lasers, the liquid and solid phase diagrams of these compounds, their defect characterization such as point defect concentration calculations and transmission electron microscopy (TEM). He was involved in and responsible for digital optical recording disk research and fabrication. Subsequently, he was in charge of materials characterization and materials engineering, the latter mainly focused on low and high pressure discharge lamps.

Born in Utrecht, The Netherlands, Blom earned his B.Sc. degree in 1962, his M.S. degree in 1965, and his Ph.D. in 1969 in Material Science, all at the University of Utrecht. He joined the IBM T. J. Watson Research Center as a post doctoral fellow in 1969 and Philips Research in 1971. At IBM he did research on LPE of InP and InP-based ternary compounds for the development of high efficiency LEDs and lasers. In the course of that work he investigated several III-V ternary phase diagrams. At Philips Research he studied Czochralski growth and several epitaxial crystal growth methods for the fabrication of high efficient GaP LEDs and GaAlAs lasers. He investigated both experimental and theoretical aspects of these materials. His work on TEM addressed the dislocation structure in III-V lasers as it related to laser life times. His research on materials for digital optical recording showed that surface tension and capillary pressure are the driving forces toward the equilibrium status, leaving a well-shaped hole

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James McBreen is Head of the Conducting Polymer Group at Brookhaven National Laboratory where he does research on lithium and metal hydride batteries and polymer electrolyte

fuel cell materials.

Born in Cavan, Ireland, McBreen obtained his B.S. in chemistry from University College Dublin. He received a Ph.D. from the University of Pennsylvania, for studies on the effects of electrolytic hydrogen on the embrittlement of iron and steel. McBreen then worked for 12 years in industry, including positions with Yardney Electric Corporation and General Motors Research Laboratory. In industry he conducted research and development work on a wide variety of aqueous battery systems. For his work on zinc electrodes he received the Battery Division Research Award in 1974. Since joining Brookhaven in 1977, he has done research on batteries and fuel cells. More recently he worked on the application of *in situ* synchrotron X-ray techniques to the study of battery and fuel cell materials.

McBreen has been a member of the Society since 1965, and has been involved in Society activities for many years. He has been Secretary of the Society and was Chairman of both the Energy Technology Group and the Battery Division. He was Chairman of the Education Committee and is currently Chairman of the Honors and Awards Committee. He has also served on the Society Meeting Committee and the Technical Affairs Committee. He was a Battery Division Editor for the **Journal**. McBreen has authored or co-authored over 100 scientific papers. In addition to authoring and presenting papers at Society Meetings, he has organized several symposia.

### Candidacy Statement

*The purpose of The Electrochemical Society is to serve its members and promote*

(see McBreen on page 58)

## Candidates for Vice-President



Jan B. Talbot is a Professor of Chemical Engineering and Materials Science in the Department of Applied Mechanics and Engineering Sciences (AMES) at the University of California, San

Diego which she joined in 1986. She received a B.S. and M.S. in chemical engineering from The Pennsylvania State University. Dr. Talbot worked at Oak Ridge National Laboratory (ORNL) from 1975-1981 as a development engineer in the Chemical Technology Division, where she mainly conducted experimental research on tritium recovery techniques for fusion reactor technology. During her last year there, she administered seed money programs and provided a variety of both technical and administrative assessments in the Laboratory Program Planning and Analysis Office. She returned to graduate school and received her Ph.D. in chemical engineering from the University of Minnesota in 1986.

At present, Talbot's research interests are directed to electrodeposition in magnetic recording and microelectronics technologies, electrophoretic deposition of phosphors in the processing of advanced displays, and corrosion. In 1992-1993, she spent a sabbatical year with the Electrodeposition Group at the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland. Since 1992, she has been the Public Director of the Board of Certified Safety Professionals. She served as a member of the World Technology Evaluation Center (WTEC) Panel, which evaluated display technologies in Russia, Ukraine and Belarus, and served as a member of the Department of Energy (DOE) Advanced Fuel-Cell Commercialization Working Group in 1993-1994. She chaired the new Gordon Conference on Electrodeposition in 1996. She has been a consultant to a number of companies.

Dr. Talbot has been the Editor of **Interface** since 1995. Other Society

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## Candidates for Treasurer



William D. Brown holds the rank of University Professor and has served as Head of the Department of Electrical Engineering at the University of Arkansas, Fayetteville, since 1983. Dr. Brown established the **High Density Electronics Center (HiDEC)**, a world class electronic packaging research center, in 1991, and served as its first Director. He received his B.S. from the University of Arkansas in 1969, M.S. from Pennsylvania State University in 1970, and Ph.D. from the University of New Mexico in 1975, all in Electrical Engineering.

From 1969 to 1977, Dr. Brown was a member of the Technical Staff at Sandia National Laboratories in Albuquerque, New Mexico, where he designed electronic test equipment, developed semiconductor device fabrication technologies, and studied the effects of defects and ionizing radiation on semiconductor devices. Since joining the University of Arkansas in 1977, his research interests have included microelectronic fabrication technology, semiconductor device physics and reliability, material synthesis and characterization, and material applications. His research has resulted in more than 165 scientific papers and 150 conference presentations. In addition, Dr. Brown has authored portions of 14 textbooks and manuals. He holds 4 U.S. patents with another 5 pending. He has been honored for both his teaching and research achievements.

Dr. Brown has served The Electrochemical Society as Dielectric Science and Technology Division Secretary, Vice-Chair, and currently, as Chair. As a Society member, he has co-organized 10 symposia, including the well-regarded Silicon Nitride and Silicon Dioxide Thin Insulating Films, Low Temperature Electronics and High Temperature Superconductivity, Diamond Materials, and III-V Nitride series. He has contributed a substantial number of papers to the **Journal** and Symposium Proceedings volumes. Dr. Brown has been actively involved on the Education Committee since 1993 and is currently Chairman. During his term on this committee, he has been instrumental in the initiation and

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Krishnan Rajeshwar is a Professor of Chemistry in the University of Texas at Arlington (UTA). He received his B.Sc. and M.Sc. degrees in chemistry from the University College, Trivandrum and the Indian Institute of Technology, Kharagpur. He was awarded his Ph.D. degree in solid-state chemistry from the Indian Institute of Science, Bangalore in 1974. After a brief stint in industry, Rajeshwar underwent post-doctoral training in St. Francis Xavier University, Antigonish, Nova Scotia and Colorado State University in Fort Collins, Colorado.

Rajeshwar joined the faculty of the Department of Chemistry of UTA in 1983. He earned tenure in 1987 and was appointed Professor in 1989. He is the author of approximately 250 papers in refereed journals. He has also written several book chapters and his book titled, "Environmental Electrochemistry," which will be released soon by Academic Press. His research

interests span a broad spectrum of topics including solar energy conversion, photoelectrochemistry, semiconductor electrochemistry, materials chemistry, and environmental pollution abatement. Rajeshwar has served on a number of review panels for Federal agencies including the Department of Energy, the Department of Defense, and the National Science Foundation. His research accomplishments have received many awards including the W. T. Doherty Award of the American Chemical Society and the Distinguished Record of Research at UTA.

Rajeshwar has been a member of the Society since 1978, and has been active in the Energy Technology Division having recently completed his term as Chairman. He has also served on several committees and has organized many symposia for the Society.

### **Candidacy Statement**

*The fiscal year ending December 31, 1996 was an outstanding year for the Society. We ended the year with a healthy surplus in both unrestricted and restricted funds. This fiscal well-being of the Society is largely attributable to the success of the*

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in the Te-Se alloy films. He also worked on crystal growth of non-linear optical materials such as potassium titanyl phosphate. His recent research interests are in light valve based projection display systems, lighting systems, and electronics for lighting systems.

Dr. Blom's activities in The Electrochemical Society include his membership in the Electronics Division Executive Committee, Treasurer of this committee, member of several Electronics Division subcommittees, member of the ECS Finance Committee, chairman of the Honors and Awards Committee of the Society, and member of the New Technology subcommittee. He was also an Associate Editor of the *Journal* since 1990 until his election as ECS Vice-President.

In addition he has served as treasurer, vice-chairman, program chairman, and chairman and conference chairman of the Electronics Materials Committee and Conference. He is also a member of the IEEE, was a member of the IEDM program committee, and a member of the AACG executive committee. He served on the editorial board of the *Journal of Electronic Materials* and was associate editor of the *Journal of Crystal Growth* and editor of several its special issues.

He is the author or co-author of many papers and presentations, and participated in many scientific meetings. ■

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*progress in electrochemical and solid-state science. In changing times we have to be nimble, respond fast, and tailor our initiatives to achieve these goals. The main thrusts of the Society should always focus on providing valuable meetings and a quality Journal.*

*The growing international character of the Society has had a positive effect. Almost all our growth in membership comes from outside the U.S., and almost 60% of the papers in the Journal come from outside North America. The Society, in response to these trends, has held two meetings in Hawaii and a very successful meeting in Paris. International activities are being reviewed by the Long Range Planning Committee; their findings should be given a high priority. Our interactions with the European and Japanese technical community have grown. We now have Local Sections in Europe, Japan, and Israel. Efforts should be made to interact with other parts of Asia and South America. When appropriate, the formation of other Local Sections should be pursued.*

*For most of the 90s we have had a continuous string of very successful meetings that have exceeded expectations. This is largely due to excellent technical programs developed by our Divisions and Groups, attractive meeting locations, and the professionalism of the ECS Staff. We should continue with this successful formula. Advantage should be taken of the new "information age" communications to organize special symposia, with short lead times, in areas of new technology. It is important that we continue with periodic meetings outside mainland U. S.*

*The Journal continues to prosper. Its submission rate is about 110 papers per month and Letters will be spun off as a separate publication that will be available on-line. Associate Editors should be appointed for both Japan and Europe. Every effort should be made to use the new tools of the "information age" in publication of the Journal as long as it improves the product and makes economic sense.*

*Our membership is our most important asset. The formation of Student Chapters within Local Sections should be encouraged as a method to attract students and get universities and faculty involved in the Society. The best way to retain membership is to provide excellence in our meetings and publications while maintaining reasonable membership dues and meeting registration rates. ■*

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activities include Chairman of the Host Committee for the 1986 Meeting in San Diego, a member of the Education Committee (and its Chairman, 1989-94), Ways and Means Committee, Publication Committee, and the Electrodeposition Division Executive Committee. She coauthored the IEEE Division's "Report of the Electrolytic Industries" for 1990 and 1991. She has co-chaired many symposia, organized the first few General Society Student Poster Sessions, and co-edited a proceedings volume.

### Candidacy Statement

*It is a great honor to be a candidate for Vice-President. I am willing to accept the responsibility of providing future leadership for the Society in order to safeguard and develop the Society's goals of serving its members and promoting progress in electrochemical and solid-state science and technology. In recent years, the Society's leadership has been progressively implementing many new ideas. These changes have improved communication among members, through the Web site and the magazine **Interface**, and by hosting joint international*

*meetings, such as the recent meeting in Paris; and have kept the Society at the forefront of science and technology, through the publication of our premiere Journal.*

*I would like help to implement progress in these areas by continuing improvements in the quality of the meetings and by being responsive to the needs of the membership, which is increasingly becoming more international. However, the vitality of the meetings are my highest priority. The Society meetings should maintain high quality and vibrancy, but should afford more coordination of symposia between Divisions. Ways to streamline ideas for new symposia to keep meetings timely should be developed. The format of the meetings with such venues as poster sessions, technical exhibitions, tutorial lectures, etc., should reflect the interests and needs of the membership. The Society should also strive to balance the needs of members from universities, government labs, and industry.*

*The Society activities in education and outreach need enhancement at many levels to increase both our public relations and public awareness of our contributions. Our alliances with other organizations and through joint symposia offer effective ways to implement representation for strengthening advocacy of important issues and for recognition of our Society's interests. ■*

(Rajeshwar continued from page 15)

*technical symposia and the publications program. We have enjoyed a long succession of outstanding leaders, a dedicated staff and a committed membership. However, there is still room for further improvements. As Treasurer, I shall work with the past and present leadership, the ECS staff, and the members of the Society to consolidate these gains.*

*The long-term investment portfolio of the Society must fulfill the dual objectives of providing sufficient funds for the various endowment programs, and producing enough growth in principal to offset inflationary pressures on operating expenditures. Safety of principal also is a major concern in this regard. While we have been able to secure close to a 10% return on our long-term investments in the past, this does not appear to be possible now. Thus, to meet the Society objectives, we must revise our policy to accommodate these shifting economic trends. Specifically, it will be essential to reinvest a portion of our current income to help provide for growth in principal to offset the ravages of inflation. I shall work with the Society leadership and professional management to develop a viable policy that incorporates the right balance of conservatism and a healthy return on investments.*



*In summation, I have enjoyed many years of service to the Society, and I look forward to many more years of involvement. I am particularly excited about the challenges involved in continuing the Society's excellence into the next century.* ■

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growth of the highly successful Student Poster Session held at each ECS Meeting. With his guidance and diligence, the Student Poster Session and the Society's Short Course program has improved and grown in size and popularity. In 1996, he received the Thomas D. Callinan Award from the Dielectric Science and Technology Division.

### **Candidacy Statement**

*As a candidate for Treasurer of The Electrochemical Society, I believe my primary responsibility is to insure the Society's continued fiscal solvency. Key to this is the success of the Society which can, in part, be quantified as increased membership and member benefits, excellent leading-edge technical symposia, relevant short*

*courses, and respected publications, such as the **Journal**. I believe I can be an advocate and catalyst for the Society's growth and improvement in these key areas by understanding and enabling sound financial reinvestment by the Society in programs that enhance its professional status and technical excellence. By working with the Society's Financial Policy Committees, Executive Committee, and Board on key financial decisions, my vision of the Society moving forward with membership, symposia, and publications can be realized in the following ways.*

*In addition to the traditional member recruiting methods, I believe the Society should develop and implement programs which focus on youth. Since the future of the Society rests with following generations of scientists and engineers, I believe that increasing the Society membership can best be accomplished through a program which targets high school and young college students. The program should define electrochemistry and solid-state science, encourage youth to consider careers in these two rather broad technical categories, and introduce the ECS, its role and unique attributes as a professional society, to these students. There should be a proactive effort to involve new members in Society activities at both the local and*

*national levels so that they develop a commitment to the Society and its success.*

*There is no question that the Society has been very receptive to changes as evidenced by the recent swift transition to electronic communication and publication, the launching of **Interface** magazine, the plan to publish a journal of Letters, and the internationalization efforts now in progress. The Society must continue to explore new ideas. Thus, it is important that the Society officers actively solicit input from membership and be willing to implement changes consistent with the Society's objectives in a forward-looking, fiscally-responsible manner. Although there is often financial risk involved in innovation, occasionally such risk must be taken if the Society is to grow and prosper.*

*I believe that The Electrochemical Society is strong and healthy at the present time because of a long history of having highly qualified and dedicated leaders and an outstanding Headquarters staff. Consequently, I feel honored to be nominated for the position of Treasurer of the ECS and, if elected, will execute the duties of the office to the best of my abilities. I would consider it a great honor to be asked by the membership to help guide the Society into the 21st century.* ■