CANDIDATES FOR SOCIETY OFFICE

The following are biographical sketches and candidacy statements of the nominated candidates for the annual election of officers for ECS. Ballots (and instructions for voting either online or by mail) will be sent in January 2009 to all Voting Members of the Society. The offices not affected by this election are that of the Treasurer and Secretary.

Candidate for President

Paul M. Natishan received a BS in biology from Wilkes College (1975) and an MS (1979) and PhD (1984) in materials science and engineering from the University of Virginia. His dissertation research was on the use of graphite fiber-polymer matrix composites as electrode materials for the electrochemical disinfection of recirculation fluids. He was awarded a National Research Council Associateship in 1983 to work at the Naval Research Laboratory (NRL) in the area of passivity and localized corrosion. Dr. Natishan joined NRL as a Research Metallurgist in 1985 and he is currently Head of the Corrosion Science Section. His research efforts have included the use of ion beam surface modification techniques to study and improve the passivity of aluminum, paraequilibrium alloying for improved hardness and corrosion resistance, determining the role of chloride ions in oxide film breakdown using X-ray photoelectron spectroscopy and X-ray absorption spectroscopy, inhibition of microbiologically influenced corrosion, and the production and electrochemical uses of diamond and diamond-coated materials. His research efforts have resulted in 79 publications and seven U.S. Patents.

Dr. Natishan has been a member of ECS for 27 years. He became active with the Society as a member and Chair of the National Capital Section's Executive Committee and subsequently as a member and Chair of the Council of Section's Executive Committee. Dr. Natishan has served on the Corrosion Division's Executive Committee, as Chair of the *ECS Transactions* Charter Committee, as the Alternate Trustee to the Federation of Materials Societies (since 1995), and as a member of most of the standing committees. He was the Society Secretary from 2000 to 2004 and has served on the Board of Directors for eight years. He has organized numerous symposia, and edited several proceedings volumes and the ECS booklet "What Is Electrochemistry?" (1997). Dr. Natishan was the recipient of the National Capital Section's Blum

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Candidates for Vice-President

Fernando Garzon has had the great fortune to pursue a career in energy science and technology, for all of his professional life. His graduate research at the University of Pennsylvania was centered on the fundamental properties of ceramic ionic conductors in the beta" alumina family. His postdoctoral appointment with Dr. Ian Raistrick at Los Alamos National Laboratory was originally focused on supercapacitor materials. The discovery of high temperature superconductivity redirected his research to the fundamental growth and characterization of these new materials.

Dr. Garzon's experience in thin film ceramic materials growth and past background in solid-state electrochemistry enabled him to develop new classes of ceramic gas sensors. These mixed potential devices detect oxygen, hydrogen, and combustion emissions such as hydrocarbons, carbon monoxide, nitric oxides, and sulfur dioxides. He has worked for many years with the transportation and power industries to improve energy efficiency and reduce emissions.

He also became actively involved in the multidisciplinary Los Alamos fuel cell program in the early '90s. He was able to contribute to the understanding of the degradation mechanisms of polymer fuel cells by adapting modern materials analysis techniques for the characterization of membrane-electrode assemblies. Dr. Garzon is currently studying the effects of common fuel/air contaminants on polymer fuel cells. He also leads fundamental studies of high temperature proton conducting electrolytes. Dr. Garzon has been a Society member since 1986, a past Chairperson of the HTM Division and served on many ECS and DOE committees. He has co-authored over a hundred publications and seven patents.

Statement of Candidacy

Meeting the technological needs of a growing world population, while minimizing environmental and social

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Jerzy Ruzyllo is a professor of electrical engineering and materials science and engineering at Penn State University. Dr. Ruzyllo's research activities are in the area of manufacturing methods and devices for semiconductor micro- and nanoelectronics and photonics as well as processing and characterization of electronic and photonic materials. His research emphasizes surface modification processes, as well as novel methods of semiconduc-tor, including semiconductor quantum dots, and dielectric thin film formation and characterization. His key contributions are in the area of semiconductor surface processing with emphasis on gas-phase surface cleaning and conditioning.

Dr. Ruzyllo has obtained advanced degrees, including a PhD in 1977 and a DSc ("Habilitation") in 1983 from the Warsaw University of Technology in Poland, where he also served on the faculty prior to joining Penn State in 1984. As a graduate student he was a recipient of the fellowship of the Japanese Ministry of Education and spent two years carrying out graduate research at the Tohoku University in Japan. More recently, he was a visiting scholar at IMEC, Leuven, Belgium.

Dr. Ruzyllo has presented results of his work in over 200 papers and conference presentations, many of them in ECS publications (fifteen papers in the Society's *Journal*, three in the *Letters*, one in the *Interface*, and over 40 in ECS Proceedings Volumes and *ECS Transactions*). He also holds five patents. A frequent invited speaker, he has delivered about 150 invited talks, seminars, and tutorials in a number of countries around the world. He is an author of *Semiconductor Glossary*, published as a book and on the Internet, as well as several book chapters. Dr. Ruzyllo is very active in the area of Internet publishing, where he has developed and maintains a major semiconductor-related portal. He has consulted for several industrial organizations and served on the Board of Directors of QC Solutions, Inc.

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Paul M. Natishan

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Award (1996) and Foley Award (1998) and was inducted as a Fellow in 2005. He is currently Senior Vice-President. In addition to his ECS activities, Dr. Natishan was a section editor for the *ASM Handbook on Corrosion*, an associate editor for *Corrosion Journal*, and contributed the chapter on "Corrosion and Corrosion Control" in the Kirk-Othmer Encyclopedia of Chemical Technology (1993, revised in 2002). He was the recipient of the 2005 J. Kruger Award (B/W Section of NACE) and was named a Fellow of NACE International in 1998. He has been a member of the Research Committee of NACE International since 1996.

Fernando Garzon

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impacts, is one of the major challenges facing humanity. New solutions in energy conversion technology and energy storage are needed to meet the growing energy demands worldwide. The information technology sector also faces major challenges in producing energy efficient and affordable systems and environmentally benign manufacturing and use. ECS members have historically been key participants in the aforementioned areas and the Society needs to continue to provide leadership and a venue for professional support of its members.

The lifeblood of any scientific society is its membership. Maintaining a society that is receptive to the needs of its membership is vital. It will always be a challenge to support such a diverse membership but it is a very worthwhile endeavor, as meaningful research and technology greatly benefits from multidisciplinary participation. Worldwide participation is also a key element, as science and technology development is a global effort that relies on the talents of many nations. Nurturing and mentoring young scientists is very important to everyone's future and so we must always pay attention to student chapters, education, and student recruitment.

Historically, ECS has performed an excellent job at providing relevant symposia for the rapid dissemination of scientific information and an environment that fosters discourse and collaboration. We need to continue to be diligent with careful symposium planning and the somewhat painful task of symposium coordination.

Recently, the Society has enhanced its publication formats improving the publication timeliness with the electronic publications of the *Journal*, *Letters*, and *ECS Transactions*. The ability to retrieve archival information has also improved. We need to continue to assess these forums and explore the changing world of scientific publishing. Scientific rigor and integrity must always guide our editorial process.

ECS is a well-run scientific organization that has evolved to meet the changing needs of the electrochemistry, electronic materials, and energy research communities. I have watched the Society meet the challenges of changing technology, electronic publication, and the complexity of administering to a multidisciplinary membership. I am honored to be a member and Fellow of ECS and would be delighted to serve our Society in continuing leadership roles.

Jerzy Ruzyllo

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A member of ECS since 1985, Dr. Ruzyllo is involved primarily with the Electronics and Photonics Division where from 2001 to 2007 he served as Treasurer, then Vice-Chair, and finally Chair. He served on the ECS Board of Directors and is currently a member of the ECS Honors and Awards Committee and Chair of the selection committee for the Gordon E. Moore Medal for Outstanding Achievement in Solid State Science and Technology.

Dr. Ruzyllo initiated (in 1989) and serves since as a lead organizer and co-editor of the proceedings series, the *International Symposia on Semiconductor Cleaning and Surface Conditioning Technology in Semiconductor Device Manufacturing*. He was also instrumental in introducing four other successful symposia sponsored and co-sponsored by the Electronics and Photonics Division.

Dr. Ruzyllo is an ECS Fellow (1999) and a Fellow of IEEE (2004). He holds the title of Professor bestowed in 2003 by the President of the Republic of Poland. He has vast international experience, speaks Polish and French, and communicates in Japanese and Russian.

Candidate's Statement

The Electrochemical Society is an elite scientific organization, which cannot carry out its activities relying solely on its excellent reputation and long history of scientific leadership. The Society must remain constantly vigilant with regard to its identity and cohesiveness of the message it conveys to the worldwide scientific and technical community regarding its mission and scope. In this statement, I address three issues which, among several others, I would consider to be of special importance to the wellbeing of the Society, now and in the future.

- A phenomenon of recent years is that the demarcation lines between scientific domains of electrochemistry and solid-state are in many instances blurring. This phenomenon should be considered a very favorable course of events to the scientific organization which defines itself as "the society for solid-state and electrochemical science and technology." Now and in the future, more than ever in the past, a blend of electrochemistry and solid-state makes the Society unique and is its strength. In my opinion, however, we don't properly project this image of scientific cohesiveness and uniqueness to the outside world. Even internally the divisions between "wet" and "dry" parts occasionally run deeper than what could be considered a desirable nurturing of diversity. Given the opportunity, I would strongly promote the process of "internal integration," with the aim of helping establish synergistic interactions between scientific domains represented by ECS. I consider this issue to be of critical importance to the continued growth of the Society.
- While quantity is not a substitute for quality, the issue of membership must remain as a point of attention. This is because certain critical mass in terms of the number of members is needed to assure the Society's adequate impact and relevance. Other than the routine solicitation of new members, the way to assure growth of its membership is through global expansion as well as attraction (and retention after graduation) of student members. Each avenue is important in its own way and each must be vigorously pursued.
- To stay on top as a scientific society, ECS must be very efficient in the way it disseminates the knowledge generated through its members' activities. Accordingly, publishing must remain at the forefront of the Society's agenda, and the exploration of new publication media should be a continued effort. If elected, I would like to promote more aggressive exploration by the Society's publishing program of the education and popularization of science opportunities.

As a scientific society ECS does not require any drastic changes, either in its structure or its operation. This does not take responsibility off the ECS leadership from aggressively looking for ways to strengthen the Society's image and maintain its leading role in the scientific community worldwide, now and in the future. If elected, I would be honored to be a part of this process.