

Editorial

THE inaugural issue of the IEEE SENSORS JOURNAL that you hold in your hands represents a remarkable event. Isn't it surprising, in retrospect, that until now the IEEE, the world's largest engineering society, has had no publication devoted primarily to the field of sensing. And this in a world where research on sensing phenomena and the development of sensing devices, of all imaginable types and physical principles, has been going strong for many decades. More recently, the field is undergoing a revolutionary period of progress comparable to only a few periods of development in the history of technology.

While it is true that many journals are publishing work on sensing, no journal such as this, devoted solely to the science and technology of sensing, in all its representations—peer-reviewed and affordable to professionals in the field—has previously been initiated.

How has this come about? Recognizing the need, 26 societies of the IEEE—an unprecedented number for a coordinated effort in IEEE's history—formed the IEEE Sensors Council in 1999. (The 26 societies have a combined membership of about 260 000.) The Council then founded its publication, the IEEE SENSORS JOURNAL, and began in earnest its work of calling for papers and developing the review and publication procedures. An Editorial Board, consisting of world-renowned experts on the enormous spectrum of sensing phenomena and methods was formed. (See this listing, as well as subscription and paper submission information, at <http://www.ieee.org/sensors>). The 26

Board members, as of the last count, represent ten countries of Europe, Asia, Australia, and North America; with the majority from outside the USA. As of March 2001, 1100 libraries and 2000 individuals worldwide have subscribed for the IEEE SENSORS JOURNAL.

This inaugural issue presents a wide selection of review papers. The intention is to bring to the reader the state of the art in research and development in a number of fields tied to sensing phenomena. It is our hope that this issue will be of lasting value.

It would be, of course, unreasonable to expect all areas of sensing to be represented in a single issue. Additional review papers will appear in future issues. However, the main emphasis will be on original research and application papers. We also plan to publish special issues devoted to specific topics.

We hope, of course, that the Journal will represent IEEE well by becoming the world's foremost publication on sensing: the publication of choice for scientists and engineers who want to present their work to their colleagues around the world.

VLADIMIR J. LUMELSKY, *Founding Editor-in-Chief*
University of Wisconsin
Madison, WI 53706 USA
lumelsky@engr.wisc.edu

JOHN R. VIG, *Founding President*
IEEE Sensors Council
U.S. Army Communications-Electronics Command
Fort Monmouth, NJ 07703 USA
j.vig@ieee.org

Publisher Item Identifier S 1530-437X(01)04348-2.



Vladimir J. Lumelsky (M'80–SM'83–F'94) received the B.S. and M.S. degrees in electrical engineering and computer science from the Institute of Precision Technology, Leningrad, Russia, and the Ph.D. degree in applied mathematics from the Institute of Control Sciences (ICS), Russian National Academy of Sciences, Moscow, in 1970.

He is the Consolidated Papers Professor of Engineering at the University of Wisconsin-Madison, with appointments in the Departments of Mechanical Engineering, Electrical and Computer Engineering, Computer Sciences, and Mathematics. At this time he also serves concurrently as Program Director at the National Science Foundation, Robotics and Human Augmentation Program. Before he moved to the USA in 1975, he held academic/research positions with the ICS in Moscow. Since then, he has been with Ford Motor Research Laboratories, General Electric Research Center, and Yale University, New Haven, CT, before moving to his current position at UW-Madison. He has held brief visiting researcher positions with the Tokyo Institute of Science, Japan, and Weizmann Institute, Israel, in 1987 and 1998,

respectively.

Dr. Lumelsky is the author of over 200 papers and books. His research interests include computational and sensor-based intelligence, robotics, highly massive sensors arrays, control theory, kinematics, pattern recognition, and industrial automation. He has served on editorial boards of a number of journals; as a member of the AdCom of the the IEEE Robotics and Automation Society and the IEEE Sensors Council; as program chair or chair of major international conferences, workshops, and special sessions, and as guest editor of special journal issues. He is an IEEE Fellow and a member of ACM and SME.



John R. Vig (M'72–SM'84–F'89) was born in Hungary in 1942. He immigrated to the United States in 1957, and received the B.S. degree in physics from the City College of New York in 1964, and the M.S. and Ph.D. degrees from Rutgers-The State University, New Brunswick, NJ, in 1966 and 1969, respectively.

Since 1969, he has been employed as a research scientist, working primarily on the experimental aspects of piezoelectric crystal devices. He currently leads a research program aimed at the development of high-stability frequency control devices, clocks and sensors for future military systems. He has published more than 100 papers and book chapters, and has been awarded 53 patents.

Dr. Vig was elected a Fellow of the IEEE in 1988, “for contributions to the technology of quartz crystals for precision frequency control and timing.” He is the recipient of the 1990 IEEE Cady Award “for outstanding contributions to the development of improved quartz crystals and processing techniques . . .”, and the 2000 Achievement Award of the Ultrasonics, Ferroelectrics, and

Frequency Control Society (UFFC-S) “for his creative and innovative research on quartz oscillators and piezoelectric sensors. . . . He was the Distinguished Lecturer of the UFFC-S for 1992–1993, served as the General Chairman of what is now the IEEE International Frequency Control Symposium from 1982 to 1988, has been a member of that meeting’s Technical Program Committee since 1972, and has been on the Technical Program Committee of the IEEE Ultrasonics Symposium since 1986. He has been twice elected to the IEEE UFFC-S Administrative Committee (for the 1986–1989 and 1995–1998 terms), and served as that Society’s President for 1998–1999. He proposed the establishment of the IEEE Sensors Council in 1998, and is now the founding President of that Council.