

A Warm Welcome to New Members of the J-EDS Editorial Board

EVER thought it was possible for anyone to access your written word anytime from anywhere around the world. Well! That time is here now. The popularity of J-EDS as an OPEN ACCESS publication of the Electron Devices Society continues to grow. In response to this, I am again expanding the editorial board of J-EDS by adding six new subject editors. In keeping with the past tradition, these professionals are established senior researchers highly respected by their peers in their area of expertise. In addition, they also espouse the J-EDS editorial culture of being author friendly. They are committed to not only arrange a timely peer review of the manuscript but also work proactively with the author(s) in overcoming the perceived deficiencies which surface during the review process. As mentioned in my Jan. 2013 editorial [1] “In a sense, the editor is to assume a supportive role in helping the author improve the quality of the manuscript rather than simply passing a judgment.”

The names of the incoming editors, along with a quote to reflect their commitment to help authors, appear below.

Dr. David K. Abe, *Fellow IEEE*
U.S. Naval Research Laboratory
Washington, DC, USA

“As a subject editor for J-EDS, I look forward to interacting with our technical communities to expand awareness of our new OPEN ACCESS publication and to encourage the submission of articles that represent the full range of the Journal’s rich fields of interest. I am committed to the support of our authors to facilitate a smooth and rapid path to publication and to our readers to ensure that the Journal meets the highest standards of technical content and topicality.”

Dr. Constantin Bulucea, *Fellow IEEE*
Texas Instruments, Retired
Santa Clara, CA, USA

“The author friendly culture of J-EDS is as desirable for authors as it is demanding and challenging for editors and reviewers, particularly when implemented within the ubiquitous trend toward camera-ready publication... In this context, reviewer’s simplistic involvement through the use of the yes/no checkboxes of the review form or author’s superficial implementation of the improvement recommendations from a reviewer or from the editor is equally unacceptable. In other words, the author-friendly culture implies that all members of the *ad-hoc* publication team created for a given submission—author(s), reviewers, and editor—engage in the process such as to effectively contribute according to their

roles, while respecting the efforts of everyone on the team, and make tangible suggestions on how to best enhance the quality of the submission to meet and exceed the publication standards of J-EDS.”

Dr. Shuji Ikeda, *Fellow IEEE*
tei Solutions Inc., Tsukuba, Japan

“As an editor of J-EDS, I would like to add different flavor from other editors. Since I have over 30 years of experience on technology development and mass production in semiconductor industries, I would be wonderful if I could support authors to improve paper quality from industry point of view, more practical and effective to industries.”

Prof. Mikael Östling, *Fellow IEEE*
KTH, Royal Institute of Technology
School of Information and Communication Technology
Kista, Sweden

“After being an editor for IEEE EDL for nearly 10 years, I look forward very much to be on the editorial team for this new open access journal. I have great hopes that we will be able to get a fast and novel approach to accurate and high-quality scientific communication. The editorial team has a broad competence and is eager to work dynamically with the corresponding authors and help them publish their best work in J-EDS.”

Prof. Enrico Sangiorgi, *Fellow IEEE*
Alma Mater Studiorum Università di Bologna
Director, Department of Electrical, Electronic, and Information Engineering
Bologna, Italy

“As a new Editor of the J-EDS editorial board, I’m looking forward to contribute to what in my opinion is the most relevant mission of this new Journal: provide our EDS community with a modern tool, which embraces the paradigms of openness and multidisciplinary in an author-friendly environment. I believe these three concepts are keywords for the everlasting success and recognition of our community in the technology value chain.”

Professor Charles Surya
Clarea Au Endowed Professor in Energy
Department of Electronic and Information Engineering
The Hong Kong Polytechnic University
Hong Kong

“It is a great honor for me to be appointed to the editorial board of J-EDS but, I also fully realize that it is a very challenging task to serve as the gate keeper of the journal. For a new open access journal to be successful, it is crucial that the

manuscripts are handled in a professional and timely fashion. This responsibility falls squarely on the shoulders of the editors and the reviewers. As editors, our job is to direct, polish, and refine until we have a final product that is worthy of J-EDS consistent with the intent of helping the author(s) publish their work. In short, the editorial board is the grease that ensures the smooth running of the engine.”

Now, with 16 world-class experts in the field to help publish your work, this is an unparalleled opportunity for the authors of J-EDS. We look forward to receiving your contributions to the Journal. This is consistent with the EDS mission statement “To foster professional growth of its members by satisfying their needs for easy access to and exchange of technical information, publication, education, and technical recognition and enhancing public visibility

in the field of electron devices.” It is our hope that this ubiquitous forum will usher in an era of speedy exchange of high-quality information leading to new products and services for the benefit of humanity.

RENUKA P. JINDAL, *Fellow, IEEE*

Editor-in-Chief

IEEE Journal of Electron Devices Society

Senior-Past President, IEEE Electron Devices Society,

University of Louisiana at Lafayette.

Lafayette, LA, USA

REFERENCES

- [1] R. P. Jindal, “EDS’s strategy for open access,” *IEEE J. Electron Devices Soc.*, vol. 1, no. 1, pp. 1–8, Jan. 2013.



Renuka Jindal (S’77–M’81–SM’85–F’91) received the Ph.D. degree in electrical engineering from the University of Minnesota, Minneapolis, MN, USA, in 1981, with minors in physics and materials science. Upon graduation, he joined Bell Laboratories, Murray Hill, NJ, USA, where his 22+ years of experience bridged both technical and administrative roles. On the technical side, he was with all the three areas such as devices, circuits, and systems. Highlights include fundamental studies of noise behavior of MOS devices with channel lengths in the few hundred nanometers regime. His contributions led to almost an order of magnitude reduction in the device noise. Over the years, this has made MOS the technology of choice for broad-band fiber optics and narrowband wireless base station and terminal applications, including cell phones and pagers. He also designed and demonstrated high-performance single-chip gigahertz-band radio frequency (RF) integrated circuits (ICs) for AT&T’s Metrobus Lightwave Project. He researched the physics of carrier multiplication and invented techniques for ultralow noise signal amplification and detection

in terms of novel devices and circuits based upon a new principle of random multiplication and optoelectronic integration. On the administrative side, he developed and managed significant extramural funding from federal agencies and independent Lucent Technology business units, Murray Hill. He was solely responsible for developing and deploying a corporate-wide manufacturing test strategy in relation to contract manufacturing for Lucent Technologies. He also established and taught RF IC design courses at Rutgers University, Piscataway, NJ, USA. In 2002, he was the William and Mary Hansen Hall Board of Regents Eminent Scholar Endowed Chair at the University of Louisiana, Lafayette, LA, USA, where he continues to teach and undertake fundamental research in the areas of random processes, wireless and lightwave devices, circuits, and systems. He is also very active in professional activities, in conjunction with the IEEE, and is a Distinguished Lecturer of Electron Devices Society. He has also been participated in ABET activities as an evaluator for electrical engineering programs at institutions in the United States. He was a recipient of the Distinguished Technical Staff Award from Bell Laboratories in 1989. In 2000, he received the IEEE Third Millennium Medal. From 1987 to 1989, he served as an Editor of the Solid-State Device Phenomena Section of the IEEE TRANSACTIONS ON ELECTRON DEVICES. From 1990 to 2000, he was the Editor-in-Chief of the IEEE TRANSACTIONS ON ELECTRON DEVICES. From 2000 to 2008, he served as the Vice President of Publications for the IEEE Electron Devices Society (EDS). In 2007, he was voted as the President-Elect of EDS. From 2010 to 2011, he served as the President of the IEEE EDS. He currently continues to be actively involved with the society as the Senior Past President.



David K. Abe (M'88–SM'12–F'15) received the B.Sc. degree in engineering from Harvey Mudd College, Claremont, CA, USA, the M.S. degree in electrical engineering from the University of California, Davis, CA, USA, and the Ph.D. degree in electrical engineering/electrophysics from the University of Maryland, College Park, MD, USA, in 1981, 1988, and 1992, respectively. Since 1997, he has been at the U.S. Naval Research Laboratory (NRL), Washington, DC, USA, where he directs a multidisciplinary group of scientists and engineers as the Head of the Electromagnetics Technology Branch. This branch carries out research and exploratory development on radio-frequency concepts, materials, devices, components, and circuits in the frequency range of 1 MHz to approximately 1 THz with focused efforts in wide and narrow bandgap semiconductor electronics, carbon-based, and other novel lower dimensional electronic materials, tunable and reconfigurable materials and circuits, control components, electron emission physics, electron beam-wave interactions (vacuum electronics), and electromagnetic theory and computational techniques.

His current research interests include the generation of coherent microwave and millimeter-wave radiation resulting from the interaction of axially-streaming electron beams with novel electromagnetic structures, with a particular emphasis on multiple-beam devices. Prior to NRL, he worked on interdisciplinary projects in pulsed power, explosive-driven magnetic flux compression, high-power microwave generation, and electromagnetic effects at the Lawrence Livermore National Laboratory, Livermore, CA, USA, Berkeley Research Associates, Beltsville, MD, USA, and the U.S. Army Research Laboratory, Adelphi, MD, USA. He was a Co-Guest Editor of the IEEE TRANSACTIONS ON PLASMA SCIENCE, Tenth Special Issue on High Power Microwave Generation and has also co-edited the Proceedings of the Seventh Workshop on High Energy Density and High Power RF (RF2005). He served as the Technical Chair of the IEEE International Conference on Vacuum Electronics (IVEC) in 2012, and as the General Chair of IVEC 2014. He is a member of the IEEE Electron Devices Society Technical Committee on Vacuum Electronics, was an elected member of the IEEE Nuclear and Plasma Sciences Society (NPSS) Administrative Committee from 2008 to 2011, served multiple terms as an elected member of the NPSS Plasma Science and Applications Executive Committee (2005–2007, 2008–2011, 2013–2015), and was elected a Fellow of the IEEE in 2015 “for leadership and contributions to the development of high power microwave and millimeter wave vacuum electronic devices.” He was the recipient of a Thomas J. Watson Fellowship, two NRL Technology Transfer Awards, and numerous official commendations and distinguished contribution awards from the Army and Navy.



Constantin Bulucea (S'69–M'70–SM'88–F'04–LF'13) was born in Romania. He received the M.S. degrees in electronics and electrical engineering from the Polytechnic Institute of Bucharest, Bucharest, Romania, and the University of California, Berkeley, CA, USA, in 1962 and 1969, respectively, and the Ph.D. degree in electronics from the Polytechnic Institute of Bucharest, in 1974. In 1969, he was granted a one-year government scholarship at the University of California, Berkeley. His active professional career spanned 50 years, equally split across the Romanian and the U.S. semiconductor histories. He was the Scientific Director and the Director of the Research and Development Institute for Electronic Components between 1974 and 1986, with assignments of national importance, such as the introduction of silicon transistor technology and the development of the process technology for the Microelectronica MOS/VLSI plant. From that period, his personal legacy includes the creation of the Annual Conference for Semiconductors, now an international IEEE event, a graduate course, and a book on *Linear Integrated Circuits*

and reference papers on surface breakdown and hot-carrier injection in silicon, originally communicated at the International Conferences on Electron Devices (IEDM) and later published in the IEEE TRANSACTIONS ON ELECTRON DEVICES and *Solid-State Electronics*. In the USA, he remained on the technical side of the semiconductors business, enjoying the last years of Silicon Valley's “Happy Scaling.” In particular, at National Semiconductor, Santa Clara, CA, USA, he was the architect of the company's 0.25, 0.18, and 0.13 μm CMOS processes for analog and mixed-signal applications. Before that, he brought to completion of Siliconix's device/process architecture for the next generation of trench power DMOS transistors, which became an industry standard in the following years. He has been active on the research and development arena as a direct contributor and also as the 2003 Chairman of the Advanced Devices and Technologies thrust of the Semiconductor Research Corporation, and as a member of the Technical Committees of the Bipolar Circuits and Technology Meeting and of the VLSI Technology Symposium. Between 2004 and 2012, he was the Editor of the IEEE ELECTRON DEVICE LETTERS (EDL) for analog and mixed-signals technology. He has published over 50 technical articles in international journals and holds 67 U.S. patents with several others pending. In 2001, he was elected as an honorary member of the Romanian Academy. In 2011, he became a Distinguished Member of the Technical Staff of Texas Instruments (TI), as a result of TI's acquisition of National Semiconductor. He was retired from TI, the next year, on his 72nd birthday, continuing to support company's patent applications that he had authored.



Shuji Ikeda (M'91–SM'02–F'04) received the B.S. degree in physics, the M.S. degree in electrical engineering from Princeton University, Princeton, NJ, USA, and the Ph.D. degree in electrical engineering from the Tokyo Institute of Technology, Tokyo, Japan, in 1978, 1987, and 2003, respectively. He joined Semiconductor and Integrated Circuit Group, Hitachi Ltd., Tokyo, in 1978, where he was engaged in research and development of state-of-the-art SRAM process and devices. He was also working on developing process technology for LOGIC, embedded memories, and CMOS power RF devices and on transferring technology to mass production line. He invented some of the outstanding structures for SRAM. He pioneered process to implement new materials in mass production, including W-polycide, Al-Cu-Si in 1984, and *in-situ* phosphorus-doped-polysilicon in 1990. He is the first to realize lightly doped drain in production to suppress Hot Carrier Injection in 1984. He also firstly implemented polyimide coat of the chip to immune SER caused by alpha particle from the resin covers of the chip. In 2000, he joined Trecenti Technologies

Inc., Tokyo. He developed new process scheme with aggressive reduction of process time suitable for single-wafer processing, which achieved less than 0.25 days/layer cycle time. In 2005, he joined ATDF, Austin TX, USA, as a Director of Technology, where he develops various kinds of technologies including scaled CMOS, nonclassical CMOS, new materials, and tools. He established *tei* Technology LLC, Tsukuba, Japan, in 2008, where he manages research and development foundry developing new devices and process technologies for VLSIs and Omni Water Solutions LLC, Austin, TX, in 2009. He also integrates emerging technology onto semiconductor manufacturing technology to create innovative products/businesses. Due to his contributions to 200 MHz RISC microprocessor, he got 1999 Research and Development 100 Award. He served as a subcommittee and an executive committee member of IEDM from 1993 to 2002. He introduced Manufacturing Session in 1998 and chaired IEDM in 2002. He was a member of EDS Administrative Committee from 2005 to 2010. He was a technical program member for VLSI Technology Symposium in 2007 and 2008. He serves as a Chairman of VLSI committee of EDS from 2009 and AdHoc Committee on Asia EDS Conference from 2014.



Mikael Östling (M'85–F'04) received the M.Sc. and Ph.D. degrees from Uppsala University, Uppsala, Sweden. He was a Senior Visiting Fulbright Scholar with Stanford University, Stanford, CA, USA, and a Visiting Professor with the University of Florida, Gainesville, FL, USA. In 2005, he was the Co-Founder of TranSiC, Kista, Sweden, acquired in full by Fairchild Semiconductor, San Jose, CA, USA, in 2011. He is a Professor of Solid State Electronics with the Royal Institute of Technology (KTH), Stockholm, Sweden. He is currently the Department Head of Integrated Devices and Circuits and was the Dean of the School of Information and Communication Technology, KTH, from 2004 to 2012. His research interests are nanoscaled Si and Ge device technologies and emerging 2-D materials, as well as device technology for wide bandgap semiconductors for high-power/high-temperature applications. He has supervised 35 Ph.D. thesis works and has co-authored about 500 scientific papers published in international journals and conferences. He was the recipient of the First ERC Grant for advanced investigators. He was an Editor

of the *IEEE Electron Device Letters (EDS)* from 2005 to 2014 and has been the Vice President of EDS since 2014.



Enrico Sangiorgi (F'05) received the Laurea degree in electrical engineering from the University of Bologna, Bologna, Italy, in 1979. In 1983, 1984, and 1991, he was a Visiting Scientist at the Center for Integrated Systems, Stanford University, Stanford, CA, USA, for approximately three years. From 1985 to 2001, he was a Consultant at Bell Laboratories, Murray Hill, NJ, where he was a Resident Visitor for over three years. In 1993, he was appointed as a Full Professor of Electronics at the University of Udine, Udine, Italy, where he started the Electrical Engineering Program and the Microelectronic Group. In 2002, he joined the University of Bologna, where he is currently in charge of the Nanomicro-Electronics Group at the Campus of Cesena. From 2005 to 2011, he was the Director of Consorzio Nazionale Interuniversitario per la Nanoelettronica [Italian Universities Nanoelectronic Team (IU.NET)], a Legal Consortium grouping nine university groups active in the field of Nanoelectronics. His current research interests include cooperation with

research centers and companies such as Bell Laboratories, Philips, Amsterdam, The Netherlands, Infineon Tech, Neubiberg, Germany, ST Microelectronics, Geneva, Switzerland, IMEC, Leuven, Belgium, and CEA-LETI, Grenoble, France, including the physics, characterization, modeling, and fabrication of silicon solid-state devices and integrated circuits. In particular, he has been working on several aspects of device scaling, its technological, physical, and functional limits, as well as device reliability for silicon CMOS and bipolar transistors. In order to tackle and eventually overcome the hurdles of device scaling, down to the ultimate physical and technological limits, he has devised and developed several original concepts and methods in the characterization and modeling of nanoscale silicon devices. Recently, his interests included the physics and modeling of Photovoltaic devices, where he has worked on several aspects of device optimization. He has co-authored 34 papers presented at the IEDM Conference, and overall 250 papers on major journals and conference proceedings. In 2005, he was appointed as a member of the CATRENE Scientific Committee. Since 2006, he has been the Vice Chairman of the Scientific Community Council (SCC) of the European Nanoelectronics Initiative Advisory Council (ENIAC). In 2007, he was appointed as a member of the Steering Board of AENEAS, the private section of the ENIAC European Technology Platform. In 2008, he was appointed as the CEO of Rinnova srl., Fiesso, Italy, a new company founded by the University of Bologna aiming to bring research and innovation to SMEs. From 2008 to 2012, he was the Dean of the Second School of Engineering at the University of Bologna. In 2012, he was appointed as a Director of the Department of Electrical and Electronic Engineering—Guglielmo Marconi, University of Bologna. Since 2014, he has been the Director of the SINANO Institute, International Organization grouping 23 European Institutions active in the field of nanoelectronics. From 1994 to 2009, he was an Editor of the IEEE ELECTRON DEVICE LETTERS. He has been a Guest Editor for several special issues on major scientific journals such as IEEE TRANSACTIONS ON ELECTRON DEVICES and *Solid State Electronics*. He was a member of the Technical Committees of several International Conferences on Electron Devices (IEDM) from 1991 to 1996 and from 2004 to 2006, ESSDERC (1999 to present), INFOS (1995–2003), and ULIS (2000–2008). Since 2011, he has been a Steering Board Member of the IEEE JOURNAL OF PHOTOVOLTAICS. He is a Distinguished Lecturer of the Electron Device Society, a Chairman of the Electron Device Society, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems Technical Committee from 2004 to 2011, a member of the Clelio Brunetti Award Committee and Education Award Committee of the EDS. Since 2011, he has been elected as a member of the EDS AdCom. Since 2013, he has been a member of the EDS Fellows Evaluation Committee. He has been involved in several European Projects of the 5, 6, and 7 FP with management responsibilities, and has acted as Project Reviewer for the European Commission.



Charles Surya received the Ph.D. degree in electrical engineering from the University of Rochester, Rochester, NY, USA, in 1987. From 1987 to 1994, he was associated with the Electrical and Computer Engineering Department, Northeastern University, Boston, MA, USA, where he joined the Electronic and Information Engineering Department in 1994 and remained there since. His research interests are optoelectronic materials and devices, including MOCVD growth of GaN thin films and the study of GaN-based LEDs and UV detectors, growth of organic–inorganic hybrid perovskite materials, the fabrication of advanced perovskite-based photovoltaic cells, and low-frequency noise in electron devices. He is currently spearheading the collaborative effort between the Hong Kong Polytechnic University, Hong Kong, and the City of Dongguan, China, for the establishment of an Research and Development Center on the study of photovoltaic materials, devices, and systems. He became a Full Professor of the department in 2002, and since 2013, he has been a Clarea Au Endowed Professor in Energy. He has served in various administrative

posts, including an Associate Head of the EIE Department (2002–2005), an Associate Dean of the Faculty of Engineering (2007–2010), and the Acting Dean of the Faculty of Engineering (2010–2012) of the Hong Kong Polytechnic University. While serving as an Associate Dean and the Acting Dean of the Faculty, he was responsible for the implementation of outcome-based approach in the Engineering Faculty. From 2007 to 2013, he was the Hong Kong Polytechnic University Representative of the Hong Kong University Grants Council Panel for the outcome-based education to oversee the implementation of outcome-based approach among the Engineering Faculties in Hong Kong. He had been active in EDS and had served in various capacities, including the conference co-chair and the chapter chair in the past. He is currently serving as the Chairman of the Optoelectronic Devices Technical Committee.