

Where Dreams Soar

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IEEE
AWARDS

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Dear IEEE Members,

Distinguished Colleagues, and Friends,

The recipients of the 2007 IEEE medals and awards are pioneers and leaders who dared to dream and ventured into the unknown to turn their ideas into reality. At the annual Honors Ceremony, and at IEEE events and conferences throughout the world, we pay tribute to these individuals for their impressive technical and scientific accomplishments, for their commitment to the education of future engineers, for their support of the IEEE and the profession, and ultimately for their impact on humanity.

These recognitions could not be possible without the generous support of IEEE awards program sponsors. These leading corporations, foundations, organizations, and individuals share a commitment to promoting the IEEE areas of interest and celebrating the impact of our award recipients' accomplishments.

Additionally, the IEEE Foundation, sponsor of the IEEE Medal of Honor, supports the scientific and educational purposes of the IEEE, serving as a key partner in spreading the awareness of technology and the engineering profession to even wider audiences.

As you reflect on the work of the exceptional individuals featured here, we encourage you to consider nominating others who have led developments in your own areas of expertise. They, too, dared to dream — and turned their dreams into a reality.

IEEE President and CEO,
Leah H. Jamieson

IEEE Awards Board Chair,
Paul Y.S. Cheung

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MEDAL OF HONOR

2007 IEEE Medal of Honor
Sponsored by IEEE Foundation



Thomas Kailath



For exceptional development of powerful algorithms in the fields of communications, computing, control and signal processing

In a career spanning more than 40 years, Thomas Kailath has distinguished himself with significant accomplishments as a scholar, academic and entrepreneur. Currently Hitachi America Professor of Engineering, Emeritus, at Stanford University, Dr. Kailath is a respected leader in digital signal processing and system theory. In addition to influencing modern work in semiconductor manufacturing and wireless communications, he has also mentored and personally trained several generations of electrical engineers and applied mathematicians.

Dating back to his early writings in the late 1950s, Dr. Kailath recognized that engineering theory would play a critical role in meeting technological challenges in the disciplines of communication, computation, control and signal processing. Since then, his theoretical work has led to fundamental breakthroughs in communications, information theory, signal detection and estimation, sensor array signal processing, VLSI architectures for signal processing and semiconductor manufacturing. He also contributed to probability and statistics, linear algebra, and matrix and operator theory.

He has written several books, authored or co-authored over 300 journal articles and papers, and shared in the development of 13 patents. Specific contributions by him

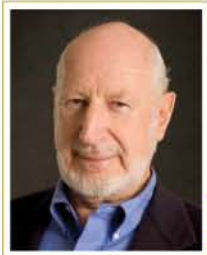
and his over ninety Ph.D. students and postdoctoral scholars include algorithms for feedback communications, universal estimator-correlator detector structures for random signals in noise and the concept of displacement structure leading to fast algorithms in many fields, such as estimation, control, direction of arrival estimation, adaptive filtering, channel identification and equalization, VLSI systems for signal processing, matrix theory and linear algebra. Much of his early work outpaced what could be implemented at the time. As technology advanced, Dr. Kailath and his students were able to successfully address industrial issues in areas such as optical lithography and multiple antenna wireless communications.

An IEEE Life Fellow, he is a past president of the IEEE Information Theory Society and a recipient of its Shannon Award. Other honors include - IEEE James H. Mulligan Jr, Education and the IEEE Jack S. Kilby Signal Processing Medals, Guggenheim and Churchill fellowships, and election to the National Academy of Engineering, the American Academy of Arts and Sciences, the National Academy of Sciences, the Indian National Academy of Engineering and the Silicon Valley Engineering Hall of Fame. Dr. Kailath received his bachelor's from the College of Engineering in Pune, India, and a master's and doctorate degree from the Massachusetts Institute of Technology.

IEEE MEDALS

2007 IEEE
Alexander Graham Bell Medal

Sponsored by Alcatel-Lucent



Norman Abramson

For contributions to the development of modern data networks through fundamental work in random multiple access

Norman Abramson is a pioneer in the field of wireless and local area networking. While at the University of Hawaii, he led efforts that gave rise to the construction and operation of the ALOHAnet, the first wireless packet network, and to the development of the theory of random access ALOHA channels. ALOHA channels have yielded significant advancements within wireless and local area networking, with versions still in use today in all major mobile telephone and wireless data standards. This influential work also developed the core concepts found today in Ethernet.

Dr. Abramson previously served as chair of the University of Hawaii's information and computer sciences department and director of the ALOHA System research project. Dr. Abramson is a founder of ALOHA Networks, Inc and of SkyWare, Inc., both wireless communications companies located in San Francisco.

Additionally, Dr. Abramson served as a consulting expert in communication systems, data networks and satellite networks for the International Telecommunication Union (Geneva), the United Nations Educational, Scientific and Cultural Organization (Paris) and the United Nations Development Programme (Jakarta).

An IEEE Life Fellow, he holds eight U.S. and international patents, and has published more than 50 technical papers. Dr. Abramson has a bachelor's degree in physics from Harvard University, a master's degree in physics from The University of California, Los Angeles, and a doctoral degree in electrical engineering from Stanford University, California. Dr. Abramson has received the IEEE Koji Kobayashi Computers and Communications Award, the Golden Jubilee Award sponsored by the IEEE Information Theory Society and the Eduard Rhein Foundation Technology Award.

2007 IEEE
Edison Medal

Sponsored by Samsung Electronics Company, Ltd.



Russell Dean Dupuis

For pioneering contributions to metalorganic chemical vapor deposition technology and continuous-wave room-temperature quantum-well lasers

Russell Dean Dupuis is a pioneer in the use of metalorganic chemical vapor deposition (MOCVD) technology for the production of semiconductor devices. He was the first to use MOCVD to grow III-V compound solar cells, injection lasers and light-emitting diodes (LED), and demonstrated for the first time room-temperature continuous-wave operation of AlGaAs-GaAs quantum-well injection lasers, establishing that such lasers are reliable enough for practical use. Today these lasers have a wide variety of commercial uses, including laser printers, optical communication systems, CD and DVD players, bar-code scanners and medical applications. AlGaAs-GaAs is also a core element in fiber optic systems being deployed around the world. In addition, he is responsible for seminal advances in the MOCVD crystal growth process and for the initial development of sophisticated equipment for vapor-phase growth of advanced semiconductor heterostructure devices.

Dr. Dupuis is currently a professor in the School of Electrical and Computer Engineering at Georgia Institute of Technology, Atlanta where he holds the titles of the Steve W. Chaddick Endowed Chair in Electro-Optics and Georgia Alliance Eminent Scholar, as well as Director of the Center for Compound Semiconductors.

An IEEE Fellow, he has previously been recognized for his achievements and contributions with the IEEE Morris N. Liebmann Memorial Award, the IEEE/LEOS Engineering Achievement Award, and the National Medal of Technology. He received a bachelor of science, master of science degree and doctorate in electrical engineering from the University of Illinois at Urbana-Champaign, Urbana, IL.

IEEE MEDALS

2007 IEEE
Founders Medal

Sponsored by IEEE Foundation



Anita K. Jones



For outstanding leadership in academic research and in directing science and engineering research in the Department of Defense

Anita K. Jones, a leader in the field of computer science, has made significant contributions to computer science research and in the Department of Defense (DOD) science and technology programs. Dr. Jones served as the Director of Defense Research and Engineering in the Pentagon for over four years, where she controlled the budget for research and engineering for the DOD, and was recognized for her exemplary service to the country with the Department of Defense Award for Distinguished Public Service. The U.S. Navy (which is authorized to name undersea mountains) named a seamount in the North Pacific Ocean (51° 25' N and 159° 10' W) for her.

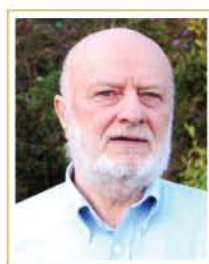
Dr. Jones' service to the computer science industry is also well known—she has served as founding editor-in-chief of the Association for Computing Machinery (ACM) *Transactions on Computer Systems* and as an editor of the *Communications of the ACM*, two of the more widely circulated journals within the field, served on several advisory boards including MIT Lincoln Laboratories Advisory Board, the Defense Science Board and has served on or chaired numerous national academies' committees. Her research has produced seminal results in several areas including operating systems, protection, security and software engineering. Dr. Jones was instrumental in building a "top-notch" computer science research program at Virginia.

Dr. Jones served as vice chair on the National Science Board where she took a leadership position in fostering advancement in long-lived data repositories, increased investment in small and medium research infrastructure and more transparent management of the major research equipment construction processes. Currently, Dr. Jones is the Lawrence A. Quarles Professor of Engineering and Applied Science and University Professor in the department of computer science at the University of Virginia, Charlottesville, Va., where she has taught for 19 years.

An IEEE Fellow, Dr. Jones has a bachelor's degree in Mathematics from Rice University, Houston, Texas and a master's in English Literature from the University of Texas at Austin and a doctorate in Computer Science from Carnegie-Mellon University in Pittsburgh, Pa.

2007 IEEE
Richard W. Hamming Medal

Sponsored by QUALCOMM, Incorporated



Abraham Lempel



For pioneering work in data compression especially the Lempel-Ziv Algorithm

Abraham Lempel is considered a pioneer in data compression. In 1977 and 1978, Dr. Lempel and his colleague, Professor Jacob Ziv, invented the first two iterations of the Lempel-Ziv (LZ) Data Compression Algorithm. Since then, the LZ Algorithm and its derivatives have become some of the most widely used data compression schemes, making the use of loss-less data compression pervasive in day-to-day computing and communication. With this compression method, information is transmitted and stored over the Internet and stored more efficiently on computer networks and other types of media storage.

Dr. Lempel's academic career spans more than 40 years, having taught both electrical engineering and computer science at Technion, the Israel Institute of Technology, from 1963 to 2004. He has held the title of full professor since 1977 and served as head of the Technion computer science department from 1981 to 1984.

Dr. Lempel joined Hewlett-Packard Labs in 1993, and a year later, established HP Labs Israel, where he currently serves as director, overseeing the development of fundamental and universal image processing tools, as well as application-driven customization.

An IEEE Fellow, HP Senior Fellow and Erna and Andrew Viterbi Professor Emeritus, Dr. Lempel holds eight U.S. patents, and has authored over 90 published works on data compression and information theory. He has received numerous awards and honors from the IEEE and other industry organizations. In 2004, the IEEE Executive Committee and History Committee proclaimed the LZ Algorithm to be an IEEE milestone for enabling the efficient transmission of data via the Internet.

IEEE MEDALS

2007 IEEE
James H. Mulligan, Jr. Education Medal

Sponsored by The MathWorks, Inc., Pearson Prentice Hall, National Instruments Foundation and IEEE Life Members Committee



Andrew S. Tanenbaum

For contributions to education in computing, especially computer organization, networking and operating systems

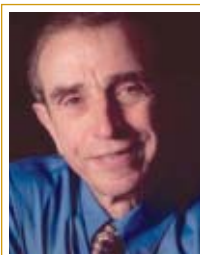
Andrew S. Tanenbaum has dedicated over three decades of his life to the task of educating generations of students in the field of computer science. Dr. Tanenbaum is best known as the creator of the open source Unix-like operating system called MINIX, which he created for use alongside his textbooks, and which was eventually used by Finnish university student Linus Torvalds to create the kernel, or central component, for the Linux operating system. Dr. Tanenbaum has also penned five textbooks, which collectively have been revised through 17 editions, and have been translated into over 20 languages. Those textbooks are considered standards in the field of computer science.

Though Dr. Tanenbaum moved to The Netherlands early in his career, he retained his American citizenship, and has maintained a key interest in American political affairs. He is well known for his endeavors on the World Wide Web, where under the pseudonym, The Votemaster, Dr. Tanenbaum created the popular Web site electoral-vote.com in 2004. One of the most widely used and cited Web sites during the 2004 U.S. Presidential election, it was drawing 700,000 visitors a day; electoral-vote.com remains popular today.

An IEEE Fellow and the recipient of numerous awards, Tanenbaum is also a Fellow of the Association for Computing Machinery, and a member of the Royal Netherlands Academy of Arts and Sciences. He received his bachelor's in physics from the Massachusetts Institute of Technology, Cambridge, MA, and his doctorate from the University of California, Berkeley. He currently serves as a professor of computer science at the Vrije Universiteit in Amsterdam, and was formerly the scientific director of the Advanced School for Computing and Imaging (ASCI) for 12 years.

2007 IEEE
Jack S. Kilby Signal Processing Medal

Sponsored by Texas Instruments, Inc.



Alan V. Oppenheim

For visionary leadership and exceptional contributions to the field of digital signal processing

Alan V. Oppenheim is considered one of the early pioneers of digital signal processing (DSP) as well as an innovator and teacher. He is recognized in the field for his contributions to DSP and their impact on a wide variety of areas including speech compression and recognition, seismic signal processing, artificial intelligence, and communications systems. His research has impacted virtually every area of DSP and his early work on homomorphic systems played a key role in many of the digital signal advancements that were to follow. He was a key originator of the complex cepstrum and its mathematical formulation, which found widespread use in speech and seismic processing and remains, to this day, a foundation of speech coding systems. The textbook *Discrete-Time Signal Processing*, which he co-authored with colleague Ronald W. Schafer, has been a widely used teaching and reference tool.

Dr. Oppenheim joined the faculty of the Massachusetts Institute of Technology (MIT) in 1964. He currently holds the position of Ford Professor of Engineering and is a MacVicar Faculty Fellow. He is also affiliated with MIT Lincoln Laboratory and the Woods Hole Oceanographic Institution.

An IEEE Life Fellow, Dr. Oppenheim is also a member of the National Academy of Engineering and has been a Guggenheim Fellow. He has also been a Sackler Fellow at Tel Aviv University. Dr. Oppenheim received his bachelor's, master's and doctorate degrees in electrical engineering from MIT. He has received a number of awards for outstanding research and teaching, including the IEEE Education Medal, the IEEE Centennial Award, the IEEE Third Millennium Medal, as well as the Education Award, Society Award, Technical Achievement Award.

2007 IEEE
Jun-ichi Nishizawa Medal

*Sponsored by The Federation of Electric Power Companies,
Japan and Semiconductor Research Foundation*



Nicolaas Frans de Rooij

For pioneering contributions to microsystem technology and effective transfer into industrial products and applications

Dr. Nicolaas Frans de Rooij is a leading researcher in the area of micro electro mechanical systems (MEMS) in Europe, whose work led to drastic improvements in the design and production of technological devices. His achievements have had a huge affect on medical and space exploration technology.

Currently serving as director of the Institute of Microtechnology at the University of Neuchatel, Switzerland, Dr. de Rooij built up the Sensors, Actuators and Microsystems Laboratory (SAMLAB) as one of the first university laboratories on MEMS in Europe. Over 300 scientific and technical publications and presentations in major journals and at international conferences have resulted from research done at SAMLAB. De Rooij was a key player in the development of silicon etching technologies that became the basis for forming precise microstructures used in applications such as pressure sensors and accelerometers. A strong advocate of MEMS, Dr. de Rooij has made numerous contributions to organizing international conferences, workshops and summits. He also has directed projects that have resulted in the integration of fully functional MEMS for sensing and control aboard the Space Shuttle's Space Lab. Most recently, Dr. de Rooij's group contributed to the production of the first micromechanical silicon-based components, such as microgears and microsprings, for use in high-performance mechanical watches.

An IEEE Fellow, Dr. de Rooij has authored or co-authored over 250 technical papers. Dr. de Rooij has a master's of science from State University of Utrecht, the Netherlands, and a doctorate from Twente University of Technology, Enschede, The Netherlands.

2007 IEEE
Robert N. Noyce Medal

Sponsored by Intel Foundation



Aart de Geus

For contributions to, and leadership in, the technology and business development of Electronic Design Automation

Aart de Geus is a pioneer in the field of electronic design automation (EDA). His contributions have revolutionized the way digital design is done today.

In the mid-1980s, Dr. de Geus led a team that developed the SOCRATES program, which incorporated timing optimization into a synthesis solution. The R&D at the research center was the genesis for the first broad commercial application of synthesis to modern integrated circuit (IC) design. Synthesis is an essential competitive technology that has changed the way in which IC design is approached.

In 1986 Dr. de Geus founded Synopsys Inc., a global leader in semiconductor design software, intellectual property (IP), design for manufacturing (DFM) solutions and professional services. Currently, he serves as chairman and CEO for Synopsys. In the 20 years since the company was founded, Dr. de Geus has helped Synopsys grow from a start-up, to a software company with annual sales in excess of \$1 billion.

An IEEE Fellow, Dr. de Geus has authored more than 25 papers on logic synthesis, simulation, timing, and interconnect delay. He holds a masters of science in electrical engineering from Swiss Federal Polytechnical Institute, Switzerland and a doctorate in electrical engineering from Southern Methodist University, TX. Dr. de Geus was named CEO of the year in 2002 by *Electronic Business Magazine*, 2004 Entrepreneur of the Year in IT for Northern California by Ernst & Young and one of the 10 Most Influential Executives of 2005 by *Electronic Business Magazine*.

IEEE MEDALS

2007 IEEE
Dennis J. Picard Medal for
Radar Technologies and Applications

Sponsored by Raytheon Company



Russell K. Raney

For innovation and technical leadership in the implementation and application of earth-observing and planetary radars

Dr. Russell Keith Raney has been one of the foremost contributors to synthetic aperture radar systems (SAR) over the past 40 years. His work includes the first dual-aperture airborne moving-target-indicating SAR, and he has produced a thesis on quadratic filter theory, which provides the foundations for formal principles of conservation for SAR systems.

Throughout his distinguished career, Dr. Raney has played a significant role in developing innovative approaches to space-based radars. While working with the Canada Center for Remote Sensing, he was one of the principal technical architects behind RADARSAT-1, which was Canada's first space-borne radar satellite. Additionally, he made contributions to the conceptual design of CryoSat, the European Space Agency's first satellite developed to focus on the Earth's environment; the hybrid-polarity architecture for two lunar radars used by NASA and the Indian Space Research Organization; and his original contributions to NASA's Magellan spacecraft, which used radar imaging to provide highly detailed maps of Venus during its four year orbit from 1990-1994.

Dr. Raney holds six patents, one of which is for his co-invention of chirp-scaling SAR processing. He has published approximately 400 papers in referenced journals and symposia proceedings.

Currently, Dr. Raney is a member of the Principal Professional Staff in the Applied Physics Laboratory of the Space Department at Johns Hopkins University, and Assistant Supervisor of the Ocean Remote Sensing Group.

An IEEE Life Fellow, Dr. Raney has previously been presented with the IEEE Geoscience and Remote Sensing Society Distinguished Achievement Award and the Transactions Prize Paper Award, among others. Dr. Raney received his bachelor of science from Harvard University, as well as a master's degree in Electrical Engineering from Purdue University and a doctorate from the University of Michigan.

2007 IEEE
John von Neumann Medal

Sponsored by IBM Corporation



Charles P. Thacker

For a central role in the creation of the personal computer and the development of networked computer systems

For over 35 years, Charles P. Thacker has led innovation in the area of distributed personal computing. He is one of the primary forces behind the introduction of the modern-day PC. While working at the Xerox Palo Alto Research Center (PARC) as a research fellow from 1970 to 1983, he served as the principal designer for the Alto personal computer system, widely considered the prototype for both workstations and windowed personal computers. Additionally, he revolutionized the computing industry as one of the co-inventors of the Ethernet local area network.

Mr. Thacker was a corporate consultant engineer at the Digital Equipment Systems Research Center (DEC SRC) from 1983 to 1997, and developed Firefly, one of the first multiprocessor workstation systems.

Since 1997, he has held the position of Technical Fellow at Microsoft Corporation, where he designed and implemented major parts of the prototype for the Tablet PC, including portions of its handwriting-recognition system. His prototype is also the basis for tablet PCs now being sold by several computer manufacturers.

An IEEE Member, Thacker holds a bachelor's degree in Physics from the University of California, Berkeley, and an honorary doctorate from the Swiss Federal Institute of Technology in Zurich. He is a fellow of the ACM, a member of the American Academy of Arts and Sciences, and a member of the National Academy of Engineering, which presented him with the 2004 Charles Stark Draper Prize, along with Alan C. Kay, Butler W. Lampson and Robert W. Taylor for development of the first networked distributed personal computer system.

IEEE MEDALS

2007 IEEE
Simon Ramo Medal

Sponsored by Northrop Grumman Corporation



Victor B. Lawrence

For technical innovation and leadership in the systems engineering of worldwide data communications networks

In the last 30 years, Victor B. Lawrence has made a significant impact to the global telecommunications industry. His pioneering work has paved the way for many developments in broadband, DSL, HDTV technologies and wireless data transfer. Additionally, his advancements in V-series modem technology and international standards have had a global impact, enabling the interoperability of computer networks across the globe.

Dr. Lawrence spent most of his career at Bell Laboratories, where he worked in research and development in signal processing and communications. His application of signal processing to data communication led to many significant advances in high-speed transmission over the public switched telephone network (PSTN). He was the architect and lead engineer behind AT&T's first 2400 bps full-duplex modem; he played a significant role in the development of every major international voiceband modem standard; and over the years, he continued to lead the innovations that resulted in modems up to 56 kbps. His continued efforts in communication transmission led to the development of wireless data modems and other high-speed data connectivity that helped to spur the growth of the Internet worldwide. Dr. Lawrence's work on high-speed transceivers led to the creation of a variety of DSL technologies, which are widely used today for broadband services and high-speed access.

Dr. Lawrence is also an avid supporter of international education and technology exchange programs, and has personally championed the effort to bring fiber optic connectivity to Africa in order to improve the communications infrastructure of some of the world's poorest countries.

An IEEE Fellow and a member of the National Academy of Engineering, Dr. Lawrence has received numerous awards, including the 2004 IEEE Award in International Communication, and in 1997, he shared an Emmy Award for the HDTV Grand Alliance Standard. He currently serves as the associate dean and Batchelor chair professor of electrical and computer engineering and founding director of the Center for Intelligent Networked Systems at Stevens Institute of Technology, Hoboken, NJ. He holds numerous patents and publications in the telecommunications field. He received a bachelor's of science, a Diploma from Imperial College (DIC), and a doctorate, all from the University of London in the UK.

2007 IEEE/RSE Wolfson
James Clerk Maxwell Award

Co-funded by Wolfson Microelectronics plc and IEEE Foundation



Irwin Mark Jacobs
Andrew Viterbi



For fundamental contributions, innovation, and leadership that enabled the growth of wireless telecommunications

Irwin Jacobs and Andrew Viterbi have been instrumental in the growth and evolution of the wireless communications industry. As two of the co-founders of QUALCOMM Incorporated, Jacobs and Viterbi pioneered Code Division Multiple Access (CDMA) technology, used in a variety of applications including cellular telecommunications, global positioning systems (GPS) and satellite-based transportation logistics systems.

Under the leadership of Jacobs and Viterbi, QUALCOMM grew into a Fortune 500 company, with annual revenues in excess of \$7.5 billion. The company has introduced numerous technologies that are key elements, including the Binary Runtime Environment for Wireless (BREW) applications platform, dedicated to enabling development and deployment of wireless data applications and service; the MediAFLO technology and network for supporting multiple channels of high quality television to cellular handsets; QChat push-to-talk technology; Eudora e-mail software; digital cinema systems and satellite systems for applications such as wireless fleet management.

Dr. Jacobs served as QUALCOMM's CEO until 2005 and currently serves as its chairman. An IEEE Fellow and member of the National Academy of Engineering and the American Academy of Arts and Sciences (AAAS), he has received numerous awards and holds 13 CDMA patents. He currently is chairman of the Salk Institute for Biological Studies, La Jolla, CA. Dr. Jacobs holds a bachelor's in electrical engineering from Cornell University, Ithaca, N.Y. and masters and doctorate in electrical engineering from MIT, Cambridge, MA.

Dr. Viterbi held the positions of chief technology officer until 1996 and vice-chairman at QUALCOMM until his retirement in 2000, when he founded Viterbi Group, LLC. An IEEE Fellow, he was elected to the National Academy of Sciences, the National Academy of Engineering and the American Academy of Arts and Sciences. He has received six honorary doctorates and numerous awards in the U.S. and internationally. Dr. Viterbi holds both a bachelor's and masters of science from MIT, Cambridge, MA and a doctorate from the University of Southern California, Los Angeles, all in electrical engineering.

IEEE HONORARY MEMBERSHIP

2007 IEEE
Honorary Membership

Sponsored by IEEE



Tsutae Shinoda

For outstanding innovative and pioneering contributions to commercializing large area color plasma displays

The holder of 59 patents, Tsutae Shinoda has been engaged in the development of monochrome and color plasma display panels (PDPs) since he joined Fujitsu Laboratories Limited, Japan, in 1973. By 1980, many research groups, including Fujitsu, observed a short device life time, and discontinued research into color PDPs. Nevertheless, Dr. Shinoda continued his investigation of the technology. His persistence was rewarded in 1983 when he invented a three-electrode surface-discharge structure that overcame the observed short-life issue.

Dr. Shinoda also invented the Address Display period separation sub-field method for a high-level grayscale display in 1990. With these innovative technologies, he successfully developed the world's first practical video graphics array PDP in 1992—a 21-inch, diagonal-color PDP with 260 thousand colors—and the first 42-inch in 1995, thereby largely contributing to the current marketplace success of high-definition television.

Dr. Shinoda started his research of plasma display panels after earning admission to his native Japan's Hiroshima University in 1970, from which he obtained bachelor's and master's degrees in electrical engineering. He also received his doctorate in electro-communication engineering from Tohoku University, Sendai, in 2000.

Dr. Shinoda is a Chairman at Shinoda Plasma Co., Ltd., a General Manager of Engineering at Advanced PDP Development Center Co.Ltd. and also serves as a professor at the Hiroshima University. He received the Japan Patent Award in 2002 from the Prime Minister of Japan, the Karl Ferdinand Braun Prize from the Society for Information Display in 2003, and the Purple Ribbon Medal in Japan from the Japanese Emperor in 2004.



Ian C. McRae

For contributions to electrification and development of the electrical grid in Southern Africa

Ian Campbell McRae had a long and successful career at Eskom, South Africa's national electric utility, where he rose through the ranks from apprentice fitter in 1947 to become the company's chief executive officer in the mid 1980s. His career at Eskom spanned a period of rapid growth of the country and company, allowing him to participate in many corporate milestones including the construction of Eskom's current fleet of power stations, including all those powered by coal, hydroelectric, pumped storage, as well as the Koeberg nuclear power station.

Dr. McRae played a significant role in raising the standard of living in Southern Africa through his "electricity-for-all" campaign, which made electricity accessible and affordable to the region's impoverished. These initiatives, and others, helped Eskom preempt and adapt to the social and political changes of the 1990s. Dr. McRae was very influential among organizations such as the World Energy Council (WEC) and the World Association of Nuclear Operators (WANO). His activities with these organizations brought him to the forefront of energy matters worldwide.

When he retired from Eskom in 1994, his reputation for fair governance and management with vision attracted many offers to help with governance on boards and commissions of interest to electric utilities. Subsequently, Dr. McRae established and became chairman of the first National Electricity Regulator (NER) in South Africa, and chairman of Southern African Development through Electricity (Sadelec) and Rotek Industries. He also was recognized as the honorary vice-president of the South African National Energy Association (SANEA), the South African national committee of the World Energy Association (WEC).

Dr. McRae has received many prestigious awards for both his business leadership and humanitarian work. He obtained both his bachelor's of science in mechanical engineering and an honorary doctorate of engineering from the University of the Witwatersrand in Johannesburg.

2007 IEEE
Corporate Innovation
Recognition

Sponsored by IEEE

TOYOTA

Toyota Motor Corporation



Texas Instruments DLP Products

For the development and promotion of a hybrid combustion-electric power train for automobiles that significantly improves fuel economy and reduces emissions without sacrificing vehicle dynamic performance

The Toyota Motor Corporation created the Toyota Hybrid System (THS) to address many critical issues afflicting the world today: petroleum depletion, global warming and air pollution.

THS combines an on-board rechargeable energy storage system that is re-energized using the kinetic energy from the vehicle and a fueled power source for drive and added power. Unlike other hybrids, Toyota's THS has the ability to run solely on battery power, during which time it is a zero emission vehicle. Other advantages include surpassing severe emission standards and doubling the fuel efficiency of a conventional vehicle of the same class.

Additionally, since THS components were required to be more compact with higher performance and higher reliance than conventional mass-produced electronic components, suppliers developed complementary component technology. Resulting innovations include advances in power electronics; improved nickel metal hydride battery technology; and advanced control systems, energy recovery (regenerative) braking systems, and fuel efficiency technologies.

Toyota made its THS technology available to the general public though the launch of the world's first mass-produced hybrid automobile, Prius, in 1997. Since the introduction of THS, Toyota has developed nine models and sold over 800,000 vehicles by the end of 2006.

Toyota plans to continue developing technological advancements to benefit the automotive and electronic industries; making THS technology available to a variety of alternative energy industries including fuel cell, electric and bio-fuel.

For pioneering innovation, design, and development of the digital light processing, DLP®, technology for a broad range of display applications

Texas Instruments established the DLP Products division in 1993 to unleash the potential of one scientist's vision for an all-digital optical device that would enable light to be manipulated with previously unimaginable accuracy and speed. The technology is used in a range of projection and display applications, including business projectors, home theater applications, and commercial entertainment products. A version of DLP technology known as DLP Cinema® technology is being used to replace celluloid-based projectors in movie theaters around the world.

The formation of DLP Products represents the largest internally funded program in Texas Instruments' 76-year history, and marked the first time any company has attempted to independently commercialize a completely new display technology. Since the first products using DLP were introduced in 1996, Texas Instruments has sold in excess of 10 million DLP chips, with the technology being used in more than half of all front-projection display devices.

At the core of DLP is the digital micro-mirror device (DMD) invented by Dr. Larry Hornbeck at Texas Instruments in 1987, an optical switch semiconductor that contains a rectangular array of up to one million hinged, microscopic mirrors. This optical switch is mounted on a standard memory cell to form the DLP chip.

DLP technology has solidified a strong presence in the consumer electronics marketplace in the current and next-generation product lines of leading electronics companies including Samsung, Toshiba, Hewlett-Packard, Dell and Panasonic.

IEEE RECOGNITION AWARD

2007 IEEE
Ernst Weber Engineering Leadership

Sponsored by IEEE



N. R. Narayana Murthy

For a pioneering role in the globalization of information technology software and services, and leadership in establishing global business and governance practices in India

For more than 25 years, N. R. Narayana Murthy has helped reshape the global information and technology software and services industries through innovative business practices that have been adopted by many of the world's top corporations.

In 1981, he founded Infosys with six friends and served as its chief executive for 20 years before retiring in March 2002. Mr. Murthy is credited with building Infosys into a multi-billion-dollar organization that helped facilitate the rapid growth of India's IT industry.

There, he initiated the Global Delivery Model (GDM), which helps to deliver rapid-time-to-market solutions and optimizes cost efficiencies. Infosys was the first Indian company to offer stock options to all its employees and the first to list on NASDAQ. He remains non-executive chairman and chief mentor for the company.

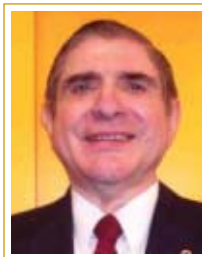
An independent director on the boards of some of the largest global institutions and an IT adviser to several Asian countries, Mr. Murthy actively promotes business and education issues and serves on several boards dedicated to fostering these topics. He also sits on the advisory board of several well-known universities. He has received numerous awards and honors and has been highly ranked by virtually every top global business publication, including being named as one of *Time Magazine's* "Global Tech Influentials" in 2004 and one of its "Asian Heroes Who Have Brought About Revolutionary Changes" in 2006.

An IEEE Member, he has also been conferred honorary doctorates by well-known universities around the world. Mr. Murthy received a bachelor's in electrical engineering from the University of Mysore, India and a master's in technology from the Indian Institute of Technology in Kanpur.

IEEE SERVICE AWARD

2007 IEEE
Haraden Pratt Award

Sponsored by IEEE Foundation



Luis T. Gandia

For outstanding leadership in promoting technical activities at the regional level and the transnational character of the IEEE at the Board level

Luis T. Gandia has devoted 27 years of service to the IEEE, including eight as a member of the organization's Board of Directors. A true leader with a global vision of what the IEEE represents, Mr. Gandia has served as an inspiration to many IEEE members worldwide.

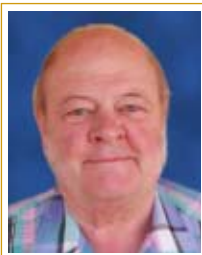
Mr. Gandia is known for promotion of globalization efforts of IEEE and maintaining IEEE's competitiveness, by focusing efforts in Latin America to form effective team groups to reinforce the activities of the chapters in most of the countries. Mr. Gandia played an integral role in improving the effectiveness of the IEEE Power Engineering Society in South America, including developing an incentive system, instituting a series of chapter chair retreats, bringing together chapters from all over the world to exchange ideas. As the IEEE Secretary he exhibited a practical sense of fiscal discipline and undertook efforts to simplify IEEE's Policies and Procedures. As RAB VP, he strived to make significant efforts to develop plans to increase membership. He is also a member and past president of the Puerto Rico Society of Engineers, and a member and past vice president of the Puerto Rico Institute of Electrical Engineers.

In 1962 Mr. Gandia established his own corporation, L. Gandia & Associates, Inc. where he acts as a liaison between manufacturers of electrical equipment and the power generating, distribution and transmission industry.

An IEEE Life Senior Member, Mr. Gandia has received numerous IEEE awards, including the IEEE Millennium Award and the Larry K. Wilson Transnational Award. He received his bachelor's in electrical engineering with a concentration in power engineering from the University of Puerto Rico.

IEEE TECHNICAL FIELD AWARDS

2007 IEEE
Electromagnetics Award



Sponsored by IEEE Antennas and Propagation, IEEE Electromagnetic Compatibility, IEEE Microwave Theory and Techniques and IEEE Geoscience and Remote Sensing Societies

Carl E. Baum

For contributions to fundamental principles and techniques in electromagnetics

Dr. Baum is a distinguished research professor in the department of electrical and computer engineering at the University of New Mexico in Albuquerque. He is most famous for developing the Singularity Expansion Method (SEM), which compactly and parametrically represents the late-time electromagnetic scattering and gives an aspect-independent radar signature for target identification. He also introduced the concepts of natural frequencies, natural modes, and coupling coefficients that could be computed from an integral equation to concisely represent experimental data. Dr. Baum is an authority on electromagnetic pulse simulation (EMP) and has designed simulators for testing various electromagnetic systems used by the U.S. Air Force as well as allied and friendly countries. His excellent design of a special class of antennas, used for accurate transient/broadband measurements of electromagnetic fields and related parameters, are now in standard use by the EMP community in both the U.S. and Western Europe.

2007 IEEE
Control Systems Award



Sponsored by IEEE Control Systems Society

Lennart Ljung

For seminal contributions to system identification and its impact on industrial practice

Lennart Ljung, professor of electrical engineering at the Linköping University in Linköping, Sweden, is a recognized leader in the area of systems and control research whose contributions have had lasting impact over nearly 35 years. His book, *System Identification—Theory for the User*, is considered a standard reference source, and his career-defining “System Identification Toolbox” for Matlab, a high-level interactive software package for model estimation has been heralded as both a great scientific and commercial success, with many of its principles having been applied to engineering problems for industry world-wide. In his groundbreaking 1977 paper, “Analysis of Recursive Stochastic Algorithms,” Dr. Ljung defined a method of proving the convergence of stochastic algorithms that provided a highly effective method for their future analysis. An IEEE Fellow with Bachelor of Arts, Master of Science and doctoral degrees all from Lund University and the Lund Institute of Technology in Lund, Sweden, he has received numerous honorary degrees and awards from institutions around the world.

2007 IEEE
Components, Packaging and
Manufacturing Technology Award



Sponsored by IEEE Components, Packaging and Manufacturing Technology Society

Dimitry Grabbe

For contributions to the fields of electrical/electronic connector technology, and development of multi-layer printed wiring boards

Dimitry Grabbe played an integral part in advancing U.S. space exploration. His pioneering work has produced nearly 500 U.S. and foreign patents covering machine design, semiconductor packaging, electronics assembly and optoelectronic connector design. His work in printed circuit board technology for electronic packaging led to the development of large, multi-layer printed circuit boards. This proved crucial in helping U.S. astronauts gain greater real-time control of their space-exploration activities. In 1964, Mr. Grabbe founded the Maine Research Corporation which specialized in high-end printed circuit boards; the company was dissolved in 1972. He joined AMP, Inc. in 1973, and helped it become a world leader in electrical/electronic connector technology, test socket technology and miniature semiconductor packages. Today, Mr. Grabbe is assisting Dr. Pryputniewicz, professor of mechanical engineering and founding director of the center for holographic studies and laser micro-mechanics (CHSLT) at Worcester Polytechnic Institute (WPI) in Worcester, Mass. with research on gyroscopes and accelerometers. An IEEE Life Fellow, Mr. Grabbe has also been recognized by AMP (now part of Tyco Electronics) with a Lifetime Achievement Award, and by the American Society of Mechanical Engineers, which chose him for its Leonardo da Vinci Award.

2007 IEEE
Cledo Brunetti Award



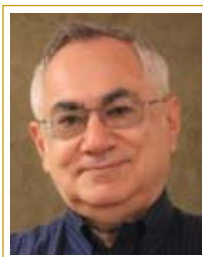
Sponsored by Brunetti Bequest

Sandip Tiwari

For pioneering contributions to nano-crystal memories and to quantum effect devices

Sandip Tiwari, the Charles N. Mellowes Professor of Engineering at Cornell University in Ithaca, N.Y., has made seminal contributions to the field of nanotechnology, resulting in greatly increased storage capacities for compact devices used in mobile communications, computing and other applications. Over his career, he has repeatedly broken new ground in areas spanning heterostructures, quantum confinement and nano-devices. Dr. Tiwari’s early research led to several technologies currently in use in compound semiconductors and other device phenomena including electron injection processes in coupled confined systems and frequency limitations of quantum-wire lasers due to gain compression. His research with semiconductors, nonlinearity, coupling across scales and adaptation also helped advance the fields of electronics and photonics. An IEEE Fellow, he received the 1991 Young Scientist Award from the Institute of Physics and the 2003 Distinguished Alumnus Award from the Indian Institute of Technology.

IEEE TECHNICAL FIELD AWARDS



2007 IEEE
James L. Flanagan Speech and
Audio Processing Award

Sponsored by IEEE Signal Processing Society

Allen Gersho

For contributions to the theory and application of speech coding

Allen Gersho, research professor at the University of California, Santa Barbara, has been one of the leading contributors to the areas of speech coding and signal compression. His applications have been instrumental to Internet voice, cellular telephony, audio for video conferencing and secure voice terminals for government and military areas. His work in Vector Quantization (VQ), a fundamental and powerful tool for data compression, has improved the efficiency of speech coding by achieving high-quality speech at very low bit rates. Along with Robert M. Gray, he co-authored *Vector Quantization and Signal Compression*, a book that has become a standard reference on the subject. He also developed with his former student, Raymond Chen, an adaptive post-filtering technique that has become the standard in code excited linear predictive (CELP) speech coders, and is used by many leading telecommunication equipment companies. An IEEE Fellow, he has previously received the Ericsson-Nokia Best Paper Award and the IEEE Third Millennium Medal. Dr. Gersho has a bachelor's from Massachusetts Institute of Technology, Cambridge, Mass. and a doctoral degree from Cornell University, Ithaca, N.Y., all in electrical engineering.



2007 IEEE
Andrew S. Grove Award

Sponsored by IEEE Electron Devices Society

James D. Plummer

For seminal contributions to the modeling, simulation, and physics of silicon devices

For over 30 years, James Plummer has made significant contributions in three main areas of electronic devices, namely, computer-aided design of silicon devices and fabrication processes, high-voltage power devices and circuits, and novel devices for memory and logic applications. His early work focused on high-voltage integrated circuits (IC) and high-voltage device structures, including seminal contributions to the insulated gate bipolar transistor (IGBT), a device that has become a key component of the multi-billion-dollar high-power electronics industry. Dr. Plummer's work on silicon process modeling led to the development of several generations of the process modeling program SUPREM, which today is the standard process-modeling tool used worldwide. Most recently, Dr. Plummer has worked on nanoscale silicon devices for logic and memory applications. An IEEE Fellow, he has received numerous recognitions for his work, including IEEE awards, Semiconductor Research Corporation Awards, "best paper" awards, the Electrochemical Society's 1991 Solid State Science and Technology Award and election to the National Academy of Engineering.



2007 IEEE Herman Halperin
Electric Transmission and
Distribution Award

Sponsored by Robert and Ruth Halperin
Foundation In Memory of Herman
and Edna Halperin

Eric B. Forsyth

For the practical application of superconductors to power transmission technology

Mr. Forsyth's pioneering work on the design of superconductors has provided vast improvements to power transmission systems including very high power density, benign environmental impact and the ability to transport power for very long distances. During 35 years at the Brookhaven National Laboratory, he worked on the design of the Alternating Gradient Synchrotron (AGS) and he led the design and creation of Brookhaven's superconducting power transmission project, which produced a wealth of knowledge on the performance of conductors, dielectric insulation, cryogenic refrigeration at very low temperatures and system operation under a variety of conditions including simulated emergencies. He also chaired the Accelerator Development Deployment Department, charged with constructing a booster accelerator for the AGS, and constructing magnets for the Superconducting Super Collider in Texas. An IEEE Life Fellow, and holds a master of applied science from the University of Toronto. He received the Dielectrics Prize from the Japanese Institute of Electric Engineers and also received the award for excellence in Technology Transfer, Federal Lab Consortium, U.S.



2007 IEEE
Masaru Ibuka Consumer
Electronics Award

Sponsored by Sony Corporation

Tomlinson Holman

For engineering contributions and innovative developments in audio and cinema multichannel playback systems

Tomlinson Holman is an innovator, inventor and teacher in the field of audio design engineering. Best known for his work in developing the THX Sound System, Home THX, and the THX Digital Mastering program, patented audio design systems that introduced realistic sound playback. THX is a baseline set of standards designed to dramatically improve an audience's cinema experience by eliminating background noise, enhancing image quality and projection, improving room acoustics and utilizing THX-approved equipment for optimal sound reproduction. He was also a leading contributor in developing the 5.1 surround sound system, an entertainment audio standard. He is currently working on its next generation – the 10.2 surround sound. Mr. Holman has been a member of the IEEE for the past 32 years, and is an accomplished author and recognized expert. In addition, he has received six U.S. and many corresponding foreign patents. Of the numerous awards he's been given, the Academy of Motion Picture Arts and Sciences recognized his work on THX by awarding him one of the two Technical Achievement Awards granted in 2001.



2007 IEEE
Daniel E. Noble Award

Sponsored by Motorola Foundation

Stephen R. Forrest, Sir Richard H. Friend & Ching W. Tang

For pioneering contributions to the development of organic light emitting diodes (OLEDs)

Stephen Forrest, Richard Friend and Ching Tang have amassed a substantial list of accomplishments in the field of light-emitting diodes. The three Noble Award co-recipients have conducted pioneering research with organic light-emitting diodes (OLEDs) that has resulted in the development and quick commercialization of flat-panel displays. Their work is present in today's state of the art high definition televisions and also is beginning to be incorporated in common portable electronic devices. Today, more than 85 companies have brought flat-panel displays to market as a result of the developments driven by these three gentlemen. OLED displays are becoming increasingly popular and also are beginning to replace small liquid crystal displays (LCDs) in handheld electronics such as cell phones, MP3 players and digital cameras because they consume less power, are thinner and lighter and can be made using inexpensive manufacturing processes such as inkjet printing. OLEDs also have exceptional video image qualities that have enhanced the quality of solid-state general lighting.

An IEEE Fellow, Dr. Forrest is the William Gould Dow Collegiate Professor in Electrical Engineering; Professor in the Departments of

Electrical Engineering and Computer Science, Materials Science and Engineering, and Physics; and Vice President for Research at the University of Michigan in Ann Arbor, MI, and previously received the IEEE Lasers and Electro-Optics Society William Streifer Scientific Achievement Award.

Dr. Friend was knighted by the Queen of England for services to physics in 2003 and is a professor at the University of Cambridge's Cavendish Laboratory in the United Kingdom. Dr. Friend is a Fellow of the Royal Society, Fellow of the Royal Academy of Engineering, and received the Hewlett-Packard Prize from the European Physical Society.

Dr. Tang is Doris Johns Cherry Professor of Chemical Engineering at the University of Rochester in Rochester, N.Y., and senior research associate and group leader of OLED Research at Eastman Kodak Research Laboratories. Dr. Tang is a Fellow of the American Physical Society, a Fellow of the Society for Information Display, and a member of the National Academy of Engineering.



2007 IEEE
Reynold B. Johnson
Information Storage Systems
Award

Sponsored by IBM Almaden Research Center

David Hitz & James Lau

For innovation in file system technology, leading to the development of network file server appliances

David Hitz and James Lau's significant contributions to networked data storage have helped fuel the growth of the billion-dollar global data storage market. Based on the belief that data should be constantly moving, or "networked" to facilitate its management, Mr. Hitz and Mr. Lau devised the Write Anywhere File-System Layout (WAFL), which has revolutionized storage as well as the sharing and protection of information assets throughout an organization. The WAFL-based network appliance, a dedicated, stackable network storage device, has changed the way information is stored at the enterprise level, supplanting general-purpose servers at many enterprise organizations. It is currently in use at an estimated 90 percent of Fortune 500 companies. Mr. Hitz and Mr. Lau co-founded Network Appliance, Inc. in 1992, which has grown into a Fortune 1000 company with annual sales of nearly of \$3 billion.

Mr. Hitz earned his bachelor's degree in Electrical Engineering and Computer Science from Princeton University. Mr. Lau holds a bachelor's degree in Computer Science and Applied Mathematics from the University of California, Berkeley, and a master's degree in Computer Engineering from Stanford University, California.



2007 IEEE
Reynold B. Johnson Data Storage
Device Technology Award

*Sponsored by Hitachi Global
Storage Technologies*

Mason Lamar Williams

For contributions to the modeling and design of high density magnetic recording

Mason Lamar Williams has made significant contributions to the understanding and development of digital magnetic recording. His key accomplishments include the creation of a critical model that identified factors limiting hard disk drive storage capacity and guided the development of thin-film disk drives. His insights were key to progress in areal density (bytes per square inch on the disk), including spin-valve read-head technology and perpendicular recording. Within the first six months of his career, while working at IBM, Dr. Williams teamed with R. Larry Comstock, an IBM engineering manager, to develop the Williams-Comstock formula – to this day, a critical design tool for magnetic recording systems. Despite more than 30 years of rapid progress and change in magnetic recording technology, the Williams-Comstock formula's estimate of "transition length"—often referred to as the "a-parameter"—remains valid and continues to be used as a basic parameter in designing recording systems. Areal density progress in the industry has resulted in disk drives being used in set-top boxes and portable digital audio player as well as computer systems.



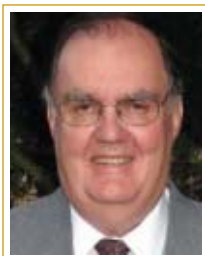
2007 IEEE
Richard H. Kaufmann Award

Sponsored by IEEE Industry Applications Society

Md Azizur Rahman

For contributions to analysis, design and development of Interior Permanent Magnet Motor Drives

Md Azizur Rahman has been a pioneer in the study of interior permanent magnet (IPM) synchronous motors, driving advancements that lay the foundation for sustained development of these motors. Widely known as "Mr. IPM," Dr. Rahman's earliest contributions concentrated on the novel design of rotor squirrel-cage and rare-earth permanent magnets beneath the rotor cage winding. Later, he built the world's first 45kW interior permanent magnet motors, which are now widely used for energy-efficient air conditioners. More recently, Toyota adopted his design of the IPM motor drive in its Prius hybrid electric car. A research professor in the faculty of engineering and applied science at the Memorial University of Newfoundland in St. John's, Canada, Dr. Rahman is currently leading research on high-performance IPM motor drive systems. Dr. Rahman is an IEEE Life Fellow; a Fellow of the Institution of Engineering and Technology, U.K.; a Fellow of the Engineering Institute of Canada; and a Life Fellow of the Institution of Engineers, Bangladesh.



2007 IEEE
Joseph F. Keithley Award
in Instrumentation and
Measurement

Sponsored by Keithley Instruments, Incorporated

Douglas Kent Rytting

For seminal technical and leadership contributions to microwave network analyzer technology

A world leader in developing methods to improve the accuracy of measurements that help confirm design goals and improve manufacturing yield, test time and cost, Douglas Rytting has been involved with virtually all microwave network analyzers introduced Hewlett Packard and Agilent Technologies since he joined HP in 1966. He created network analyzers that test the design of components and devices used in high-frequency electronics including communications, satellite, radar, and other systems to ensure they meet their design objectives. His earliest designs were in the first network analyzers introduced by HP in the 1960s. He managed the development of automatic network analyzers, RF network analyzers, and microwave network analyzers, and then helped launch HP's Microwave CAE Design Software. Mr. Rytting introduced new concepts and algorithms that form the basis for many modern microwave network analyzer calibrations. Mr. Rytting is an IEEE Member and a long time participant in the Automatic RF Techniques Group, which is affiliated with the IEEE Microwave Theory and Techniques Society.



2007 IEEE
Leon K. Kirchmayer
Graduate Teaching Award

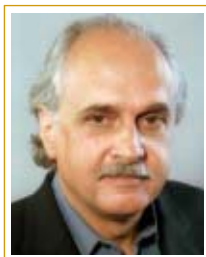
Sponsored by Leon K. Kirchmayer Memorial Fund

Michael S. Shur

For inspirational guidance of graduate students and development of novel teaching materials in solid-state electronics

Michael S. Shur has been the Patricia W. and C. Sheldon Roberts Professor of Solid State Electronics in the Electrical, Computer, and Systems Engineering (ECSE) Department at Rensselaer Polytechnic Institute in Troy, N.Y. for the past 10 years. He has served as distinguished lecturer for the IEEE Electron and the IEEE Microwave Theory and Technique Societies, given tutorials at conferences worldwide, taught courses for practicing engineers and given IEEE-sponsored lectures for academic researchers worldwide. He has taught at the University of Virginia, University of Minnesota, Oakland University, Cornell University, and Wayne State University and conducted research at the A.F. Ioffe Institute in St. Petersburg, Russia and at IBM in Yorktown Heights, N.Y. He has published and edited many key graduate texts in solid state electronics that have been translated into many languages. Dr. Shur has developed new courses on advanced semiconductor devices and novel teaching techniques among them, the development of a WEB Remote Laboratory for giving students hands-on experience and allows professors from many countries to exchange course materials.

IEEE TECHNICAL FIELD AWARDS



2007 IEEE
Gustav Robert Kirchhoff Award

Sponsored by IEEE Circuits and Systems Society

Yannis P. Tsividis

For contributions to circuits and MOS device modeling

Yannis P. Tsividis, the Charles Batchelor Memorial Professor of Electrical Engineering at Columbia University in New York, has made major contributions to the field of solid-state circuits. His contributions began in 1976, when he designed and built a fully integrated MOS operational amplifier and demonstrated its use in a coder-decoder for digital telephony. These results were widely adopted by the industry in the first massively produced mixed-signal MOS integrated circuits, which incorporate both analog and digital functions on the same silicon chip. His subsequent work has been widely used in wireless communications equipment, consumer electronics, computer disk drives, and biomedical devices. His book, *Operation and Modeling of the MOS Transistor*, is a standard reference for modeling engineers and circuit designers alike. An IEEE Fellow, he has previously received the IEEE W.R.G. Baker Prize Paper and the IEEE Undergraduate Teaching Award.



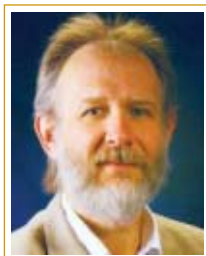
2007 IEEE
Koji Kobayashi Computers and Communications Award

Sponsored by NEC Corporation

Donald F. Towsley

For fundamental contributions to the theory and practice of computers and communication networks

Donald Towsley is a distinguished professor in the Department of Computer Science at the University of Massachusetts in Amherst and a leading scholar in developing foundational modeling and analysis techniques used by researchers worldwide to better understand the performance of computer and communication systems and networks. His seminal work includes network tomography, sample path analysis of networks and analytic modeling of the transmission control protocol. In the 1980s, he was among the first to develop early models of distributed computer systems and parallel processing systems with a particular focus on scheduling. More recently, he developed foundational techniques for analyzing and studying the propagation of Internet viruses and worms, and his work on the analytical evaluation of TCP throughput is among the most notable results obtained in networking research in the last few years. An IEEE Fellow, he previously received the IEEE Communications Society William Bennett Prize Paper Award. He is editor in chief of *IEEE/ACM Transactions on Networking*.



2007 IEEE
William E. Newell
Power Electronics Award

Sponsored by IEEE Power Electronics Society

Dushan Boroyevich

For advancement of control, modeling and design of switching power converters

Since 1998, Dushan Boroyevich together with Prof. Fred Lee has led the team of over 20 professors and over 200 students from Virginia Tech, University of Wisconsin-Madison, Rensselaer Polytechnic Institute, University of Puerto Rico-Mayaguez, and North Carolina A&T State University in the US National Science Foundation-sponsored Engineering Research Center for Power Electronics Systems (CPES). Working in partnership with more than 80 companies, CPES has become the most renowned power electronics research and education center in the world. In addition to its alumni, the most enduring legacy of CPES is the paradigm shift in power electronics research towards higher levels of integration and modularization. Dr. Boroyevich also developed a comprehensive geometric approach to modeling and control of high-frequency switching power converters, which has become a major tool in the analysis, design, and control of emerging power-electronics-based electrical distribution systems in cars, ships, aircraft, and data communication centers. An IEEE Fellow, Dr. Boroyevich is now the American Electric Power Professor in The Bradley Department of Electrical and Computer Engineering at Virginia Tech and co-director of CPES.



2007 IEEE
Donald O. Pederson Award
in Solid-State Circuits

Sponsored by IEEE Solid-State Circuits Society

Hugo De Man

For leadership in integrated circuit design and design methodology

Hugo De Man is professor emeritus at the Katholieke Universiteit Leuven (K.U. Leuven) in Belgium, the institution from which he earned his bachelor's and doctoral degrees. He also co-founder and Senior Fellow at the Interuniversity Microelectronics Center (IMEC) in Leuven. During his 40 years of work combining advanced electronic design automation, or EDA, research and integrated circuit design at the edge of CMOS technology scaling. Dr. De Man has pioneered the high-level synthesis and hardware/software co-design of systems-on-chip (SoC). He has worked on several key aspects of solid-state circuits including, mixed-signal design; the development of layout and switched-capacitor filter simulation tools (co-designing such filter chips for audio systems); high-level synthesis for digital signal processor (DSP) systems (resulting in the Cathedral silicon compiler suite), the first operational silicon compilers for industrial DSP chips; high-level synthesis of programmable co-processors (increasing design productivity); and SoC design for nanoelectronics. An IEEE Fellow, he founded IMEC, now the largest independent microelectronics research organization in Europe, with more than 1,400 employees.



2007 IEEE
Frederik Philips Award

Sponsored by Philips Electronics N.V.

Yong-Kyung (Kenneth) Lee

For leadership in the management of research and development of broadband networks and the promotion of international collaboration

Kenneth Lee is senior advisor and former president and chief executive officer of KT Corporation (Korea Telecom) in Seoul, Korea, and a visiting professor at the KAIST Graduate School of Information and Media Management, Seoul, Korea. KT Group developed one of the most extensive wired and wireless broadband access networks in the world and the world's largest broadband operator by 2003 with over five million subscribers. He also led KT to develop the first Korean voice recognition system, the first commercial CDMA Personal Communications System and a series of broadband access services from DSL to fiber LAN. When Dr. Lee was the CEO of KTF, a mobile service subsidiary of KT Corp., he was the industry leader in CDMA 3G services by deploying CDMA2000 1x and CDMA2000 1xEV-DO in 2002 — enabling high-speed wireless connectivity comparable to wired broadband. Dr. Lee is an IEEE Member and a member of Eta Kappa Nu and the National Academy of Engineering in Korea. He received the Industrial Medal (Gold) from the Korean Government in 2005 and the Forbes Magazine's Management Leadership Award in 2004.



2007 IEEE
Photonics Award

*Sponsored by IEEE
Lasers and Electro-Optics Society*

David N. Payne

For pioneering contributions to the development and commercialization of optical fiber-based technologies for communications, sensors and high power applications

During his four-decade career at the U.K.'s University of Southampton, David Payne has designed some of the highest power fiber lasers in the world and generated a host of fiber components in the telecoms and sensor arenas. He pioneered several key related developments, including photonics-based technologies for telecommunications, optical sensors, nanophotonics and optical materials. He also led the teams that invented the silica single-mode fiber laser and amplifier and broke the kilowatt barrier for high power fibre laser output. He was the first to use phosphorous as a core dopant to achieve numerous processing advantages and developed the erbium-doped fiber amplifier, which created a revolution in optical-fiber communications. A Fellow of the Royal Society, the Royal Academy of Engineering, the IEE, and the Optical Society of America, he is currently director of the University of Southampton's Optoelectronics Research Centre.



2007 IEEE
Emanuel R. Piore Award

*Sponsored by IEEE Emanuel R. Piore
Award Fund*

Randal E. Bryant

For seminal contributions to the field of computer-aided circuit design and verification, including the development and promulgation of ordered binary decision diagrams

Dr. Randal E. Bryant is a professor and dean of the School of Computer Science at Carnegie Mellon University in Pittsburgh Pa. He is internationally known for developing methods of reasoning about digital circuits using ordered binary decision diagrams (OBDDs), and for using OBDDs to formally verify hardware designs. Dr. Bryant began his research in hardware verification developing switch-level simulation, enabling efficient modeling of large-scale circuits by using a discrete model of transistor operation. Over time, his focus shifted from simulation, where a design is tested for a representative set of cases, to formal verification, where the design is shown to operate correctly under all possible conditions. OBDDs enable circuits to be simulated symbolically, covering all possible behaviors in a single execution. OBDDs are now widely used for circuit verification, synthesis, and testing, as well as in such diverse areas as artificial intelligence planning and compiler optimization.



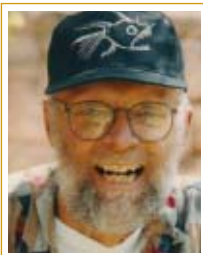
2007 IEEE
Judith A. Resnik Award

*Sponsored by IEEE Aerospace and Electronic Systems,
IEEE Control Systems and IEEE Engineering
in Medicine and Biology Societies*

Daniele Mortari

For innovative designs of orbiting spacecraft constellations and efficient algorithms for star identification and spacecraft attitude estimation

Daniele Mortari is an international authority in spacecraft mechanics. He has reshaped the fields of spacecraft attitude estimation and spacecraft formation design, impacting both theory and practice. Fundamental algorithms he developed yielded the most efficient solution for identifying stars from a randomly pointed image of a starfield. His solution is widely recognized as the gold standard for both efficiency and reliability. Dr. Mortari has solved the problem of determining the best estimate of spacecraft orientation (attitude) given the measured line of sight vectors toward the stars. He also developed an entirely new class of spacecraft constellations, the "Flower Constellations," which designs spacecraft orbits to have novel periodic structure relative to each other and to an assigned rotating frame. Using this discovery, Dr. Mortari proved that he can obtain the same or better performance with fewer satellites than the existing global positioning system (GPS) constellation, a monumental achievement given the exceedingly large size and cost of the satellites.



2007 IEEE
Frank Rosenblatt Award

*Sponsored by IEEE Computational
Intelligence Society*

James C. Bezdek

For development of the theory and applications of the fuzzy c-means and related pattern recognition methods

Dr. Bezdek is the Nystul Professor and Eminent Scholar of Computer Science at the University of West Florida in Pensacola. He developed the fuzzy c-means (FCM) algorithm, considered one of the most important discoveries in fuzzy pattern recognition and related areas and the clustering algorithm of choice for most practitioners in fuzzy exploratory data analysis. The original model has inspired many applications in related areas of pattern recognition and image processing. Areas of research benefiting from Dr. Bezdek's work include diagnostic medicine, economics, chemistry, image processing, meteorology, web mining, geology, target recognition, regression analysis, document retrieval, structural failure and irrigation models. One of the most notable applications has been in medical image analysis, where FCM segmentation of magnetic resonance images is used in conjunction with rule-based analysis for both diagnosis and pre-operative planning for brain tumor patients. Dr. Bezdek also has made pioneering contributions in deriving the theories for clustering of relational (Euclidean and non-Euclidean) data.



2007 IEEE
David Sarnoff Award

Sponsored by Sarnoff Corporation

Umesh K. Mishra

For development of gallium nitride electronics

Professor and associate dean of the College of Engineering at the University of California in Santa Barbara, Umesh Mishra is a leader in developing compound semiconductor electronics and a driving force behind the rapid progress in gallium nitride (GaN)-based microwave devices and circuits. He began his career researching indium phosphide (InP) high electron mobility transistors (HEMTs) for low noise amplifiers, which became the leading receiver technology for many space-based platforms. After joining the faculty of the University of California in 1990, he began studying microwave and power electronics devices based on the wide bandgap semiconductor GaN and related alloys, a technology now being considered for insertion into military radar and commercial wireless base stations. Dr. Mishra's research group was the first to demonstrate that the unique wide bandgap and electron transport properties of gallium nitride could be harnessed to create devices with an unprecedented combination of high-frequency performance and microwave power output. Since then, Dr. Mishra has continued to make key advances in both the fundamental understanding and the technological exploitation of GaN/AlGaIn HEMT devices.



2007 IEEE
Robotics and Automation Award

*Sponsored by IEEE Robotics and
Automation Society*

Gerd Hirzinger

For contributions in robot mechatronics, telerobotics, man-machine interface research and space robotics

Gerd Hirzinger, director of the Institute of Robotics and Mechatronics at the German Aerospace Center in Wessling, Germany, is best known for his work in advancing robotic space exploration. He developed ROTEX, the first remotely controlled space robot that flew aboard the space shuttle Columbia in 1993. The robot featured a multisensory gripper that allowed ground control based on "shared autonomy". With his co-workers he teleoperated and teleprogrammed Japan's ETS VII, the first freeflying space robot, in 1999. Since 2005 he has a small double-joint torque-controlled manipulator ROKVISS on the outside of the international space station ISS, thus demonstrating telepresence with stereo video and force feedback on one side and qualifying lightweight joints for space on the other side. His ultralight-weight 7 dof torque-controlled robot arms based on the innovative motor concept ROBODRIVE and his articulated multifingered hands are among the most advanced robot technologies worldwide. His space mouse, originally developed for ROTEX teleoperation, has become the most popular 3D input device. More recently he and his co-workers have developed and commercialized surgical robots, artificial organs, load-reducing aircraft control and innovative brake by wire systems for vehicles. An IEEE Fellow, he received Diplom-Ingenieur and doctorate degrees from the Technical University of Munich, Germany.



2007 IEEE
Charles Proteus Steinmetz Award

Sponsored by IEEE Standards Association

Vic Hayes

For outstanding leadership in the development and global acceptance of IEEE 802.11 wireless local area network standards

Popularly known as the "Father of Wi-Fi," Vic Hayes is Senior Research Fellow at Delft University of Technology in Delft, Netherlands. His most important contribution, however, was his work leading the group of engineers – from 1990 through 2000 – whose work resulted in a new set of technology standards that became the basis for wireless data transfer, Wi-Fi. That standard launched a brand-new multi-billion dollar industry for wireless, high-data-transfer rate computer communications and gave people worldwide access to the Internet with their laptops, PDAs and other devices wherever and whenever they want. The Wi-Fi standard has been adopted by countries around the globe resulting in communities and countries creating networks and economies that induced lower pricing for wireless devices. Mr. Hayes' leadership is one of the reasons that low-cost, nearly ubiquitous wireless LAN connectivity exists today. He has received numerous IEEE awards for his pioneering work in Wi-Fi, including the IEEE Standards Medallion and the Wi-Fi alliance award two years in a row. Establishing the Regulatory Committee and leading the committee through the territory of the regulatory world, eventually resulting in a global allocation of spectrum for Wireless Access Systems including WLANs at the World Radio Conference 2003.



2007 IEEE
Eric E. Sumner Award

Sponsored by Alcatel-Lucent

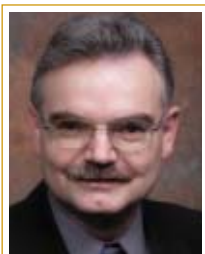
Michael G. Luby & Amin Shokrollahi

For bridging mathematics, internet design and mobile broadcasting as well as successful standardization

The collaborative work of Michael G. Luby and Amin Shokrollahi has led to breakthroughs in data transmission over packet-based networks that have resulted in global communications standards for mobile broadcasting, satellite data transmission, and Internet TV. The breakthroughs are based on a combination of the invention and practical implementations of a new class of FEC codes, called fountain codes, and the novel application of these codes to data transport. The fountain codes allow multiple senders to transmit information to multiple receivers with high quality and timely streaming media. There are several variations of these codes that are used today in a number of enterprises, military, and consumer devices and applications, supporting both wired and wireless telecommunications networks. While working together at the International Computer Science Institute, University of California, Berkeley, they also collaborated on the invention of Tornado codes, erasure protecting codes with super-fast encoding and decoding algorithms.

Dr. Luby is co-founder and chief technology officer of Digital Fountain, Inc. He is also the inventor of Luby Transform (LT) codes, the breakthrough technology that forms the basis of Digital Fountain's products. Dr. Luby received a doctorate in theoretical computer science from the University of California, Berkeley.

Dr. Shokrollahi, is currently a professor of mathematics and computer science at Ecole Polytechnique Fédérale de Lausanne, Switzerland, and chief scientist of Digital Fountain, Inc. He received his master's degree in mathematics from Karlsruhe University (Karlsruhe, Germany) and a doctorate in computer science and mathematics from the University of Bonn.



2007 IEEE
Nikola Tesla Award

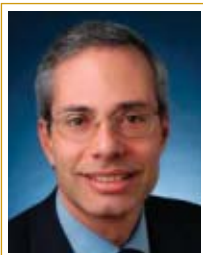
*Sponsored by The Grainger Foundation
and IEEE Power Engineering Society*

Thomas W. Nehl

For pioneering contributions to the simulation and design of electromechanical drives and actuators for automotive applications

Thomas Nehl is a leader in designing tools to improve automotive processes. At GM Research Labs in Warren, Michigan and later Delphi in Shelby Township, Michigan, where he is a group leader, he developed novel approaches to the modeling of electronically operated drive and actuator systems that have been used widely within the automotive industry. Dr. Nehl's math-based tools have a wide range of automotive applications, including fuel injectors, transmission control solenoids, controlled dampers, relays, rotary and linear actuators, accessory drives, electric power steering, traction drives for electric and hybrid vehicles and a variety of sensors (position, speed, torque). His tools have impacted a number of automotive products, including pivoting armature injectors for General Motors (GM) trucks and sport utility vehicles, port fuel injectors for GM passenger vehicles, linear EGR valves, wheel speed and crankshaft position sensors, low torque ripple PM drives for electric power steering (Delphi) and MR dampers for controlled suspensions (Delphi). Dr. Nehl holds bachelors, masters and doctoral degrees, all in electrical engineering, from Virginia Polytechnic Institute and State University (Virginia Tech) at Blacksburg, Virginia.

IEEE TECHNICAL FIELD AWARDS



2007 IEEE
Kiyo Tomiyasu Award

Sponsored by Kiyo Tomiyasu Fund

Alberto Moreira

For development of synthetic aperture radar concepts

Alberto Moreira is a leader in the field of imaging radar technology and application. He is Director of the Microwaves and Radar Institute, German Aerospace Center, Oberpfaffenhofen, Germany, and a Professor, University of Karlsruhe, Germany. He has developed new algorithms in high-resolution radar processing, image formation and interferometric techniques but his major accomplishment has been the development of innovative synthetic aperture radar (SAR) system concepts with polarimetric and interferometric capabilities. Prof. Moreira also pioneered research on associated techniques like radar tomography, digital beamforming and advanced imaging modes and developed an innovative, forward-looking radar system for enhanced vision. Prof. Moreira's research has been used extensively by the German and European Space programs, and he has managed many European Space Agency studies. He is an IEEE Fellow and recipient of the IEEE Fred Nathanson Memorial Award for the "Young Engineer of the Year" and the NASA certificate for outstanding contribution to the success the Shuttle imaging radar mission SIR-C/X-SAR.



2007 IEEE
Undergraduate Teaching Award

Sponsored by IEEE Education Society

Clayton R. Paul

For sustained excellence and creativity in the preparation of instructional material and inspirational teaching of undergraduate engineering students

For 40 years, Clayton Paul has devoted his career to teaching undergraduates about electrical engineering, motivating high school students to consider careers in engineering, and publishing instructional materials. Currently the Sam Nunn Professor of Aerospace Systems Engineering and Professor of Electrical and Computer Engineering at the Mercer University School of Engineering in Macon, Ga., he formerly held teaching positions at the Georgia Institute of Technology, Purdue University, and the University of Kentucky, and has been involved in IEEE student chapters as a faculty advisor. He also held positions at the U.S. Air Force Rome Air Development Center in Rome, N.Y., where he conducted extensive research in modeling crosstalk in multiconductor transmission lines and printed circuit boards. At the IBM Information Products Division in Lexington, Ky., his research focused on electromagnetic compatibility (EMC) design of electronic systems. He has written or co-authored 16 textbooks and other instructional materials and has published numerous technical papers in his primary research area of electromagnetic compatibility. Dr. Paul is an IEEE Fellow and member of Eta Kappa Nu.

IEEE PRIZE PAPER AWARD



2007 IEEE
Donald G. Fink Prize Paper Award

Sponsored by IEEE Life Members Committee

Michael S. Shur & Arturas Žukauskas

"Solid-State Lighting: Towards Superior Illumination,"
Proceedings of the IEEE, Volume 93, No. 10, October 2005, pp. 1691-1703

Authors Michael S. Shur and Arturas Žukauskas discuss the benefits of solid-state lighting technologies in their paper entitled "Solid-State Lighting: Towards Superior Illumination." The paper compares the approach of generating white light from solid-state phosphor LEDs by using multichip lamps comprised of colored LEDs. The tutorial paper is distinctive in that it describes a unique optimization algorithm and a report on the implementation of the versatile solid-state lamp, which utilizes a computer-controlled spectral power distribution. Under appropriate psychophysical verification, these lamps are expected to have a significant impact on the lighting industry and already have been used to treat seasonal affective disorder, sometimes referred to as "winter depression," and to facilitate energy-efficient plant growth.

Dr. Michael Shur is the Patricia W. and C. Sheldon Roberts Professor of Solid State Electronics in the Department of Electrical, Computer, and Systems Engineering at Rensselaer Polytechnic Institute in Troy, N.Y. He received his master's in electrical engineering in 1965 (with honors), from St. Petersburg Electrotechnical Institute in St. Petersburg,

Russia, and a Ph. D. (candidate) degree and Doctor of Physics and Mathematics degree from A.F. Ioffe Institute of Physics and Technology, St. Petersburg, in 1967 and 1992, respectively. Dr. Shur also serves as editor-in-chief of the *International Journal of High Speed Electronics and Systems* and editor-in-chief of a book series on "Special Topics in Electronics and Systems." An IEEE Fellow, he is listed by the Institute of Scientific Information as a highly cited researcher.

Dr. Žukauskas has been with Vilnius University, Lithuania since 1979, and currently serves as director and chief researcher at the Institute of Materials Science and Applied Research as well as a professor in the Department of Semiconductor Physics. Dr. Žukauskas is a member of the Lithuanian Physical Society and Lithuanian Materials Research Society and expert member of the Lithuanian Academy of Sciences. He holds one patent and has published 180 papers and a book. In 2002, he received a Lithuanian National Prize in Science. Dr. Žukauskas received a doctorate in semiconductor and dielectric physics in 1983 and a second degree, doctor habilitus of natural sciences in 1991, both from Vilnius University.

The grade of IEEE Fellow recognizes unusual distinction in the profession and is conferred only by invitation of the IEEE Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. The accomplishments that are being honored shall have contributed importantly to the advancement or application of engineering, science, and technology, bringing the realization of significant value to society. The total number of IEEE Fellows elevated in any one year must not exceed one-tenth percent of the total voting membership of the IEEE on record as of 31 December of the preceding year. In 2007, 268 IEEE Fellows were elevated. If you would like to learn more about the IEEE Fellow Program or would like to nominate an individual, please visit www.ieee.org/fellows.

Ronald M. Aarts

Philips Research Labs
Eindhoven, Noord Brabant, The Netherlands
for research and application in signal processing for acoustics and sound reproduction

Edward I. Ackerman

Photonic Systems, Inc.
Billerica, MA, USA
for contributions to the optimization of analog optical links

Kamal Al-Haddad

Ecole de Technologie Supérieure, Montreal
Montréal, Québec, Canada
for contributions to research and development of power electronics converters

Markus C. Amann

Technical University of Munich
Garching, Bavaria, Germany
for contributions to laser diodes for optical communications and sensing

Amir A. Amini

University of Louisville
Louisville, KY, USA
for contributions to cardiovascular imaging and medical image analysis

Paul Antonik

U.S. Air Force Research Laboratory
Utica, NY, USA
for contributions to knowledge-based radar systems

Ari Arapostathis

University of Texas at Austin
Austin, TX, USA
for contributions in nonlinear and stochastic control and applications in power systems

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University of Nottingham
Nottingham, Nottinghamshire, United Kingdom
for contributions to control of AC motor drives

Abdullah Atalar

Bilkent University
Ankara, Turkey
for contributions to acoustic and atomic force microscopy

Jean Margaret Bacon

University of Cambridge
Cambridge, United Kingdom
for leadership in design of secure, large scale, distributed systems

Roel G. Baets

Ghent University
Ghent, Belgium
for contributions to silicon photonics and to photonic integration

Ross Baldick

University of Texas at Austin
Austin, TX, USA
for contributions to analysis of power system economics

Harut Barsamian

University of California Irvine
Irvine, CA, USA
for contributions to computer architecture, dynamic microprogramming, and associative search algorithms

Luca Benini

University of Bologna, DEIS
Bologna, Italy
for contributions to design technologies for low power design of integrated circuits and systems

Kerry Bernstein

IBM - T. J. Watson Research Center
Essex Junction, VT, USA
for contributions to high performance common metal oxide semiconductor circuit design

Bhargab B. Bhattacharya

Dr. Navakant Bhat
Bangalore, India
for contributions to testing and design of digital integrated circuits

Zeungnam Zenn Bien

Korea Advanced Institute of Science and Technology
Daejeon, Korea
for contributions to development of assistive robots and human-robot interaction systems

Henk A.P. Blom

National Aerospace Laboratory NLR
Amsterdam, North Holland, The Netherlands
for contributions to stochastic hybrid process estimation and applications to aerospace systems

Pradip Bose

IBM T.J. Watson Research Center
Yorktown Heights, NY, USA
for contributions to power modeling and processor design

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Cary, NC, USA
for contributions to wireless communication systems

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Urbana, IL, USA
for contributions to robust control of industrial systems

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Raleigh, NC, USA
for contributions to distribution system reliability and risk assessment

Julia J. Brown

Universal Display Corporation
Ewing, NJ, USA
for leadership in developing and commercializing very highperformance semiconductor and organic light emitting devices

Marc McCahay

University of Cincinnati
Cincinnati, OH, USA
for contributions to theory of charge and spin transport in nanostructures

Flavio Canavero

Electronics Department, Politecnico di Torino
Torino, Italy
for contributions to the modeling of circuit and electronic interconnects

Claudio A. Canizares

University of Waterloo
Waterloo, Ontario, Canada
for contributions to voltage stability of power systems

Donald D. Chamberlin

IBM Almaden Research Center
San Jose, CA, USA
for contributions to database query languages

Barry Chambers

University of Sheffield
Sheffield, South Yorkshire, United Kingdom
for contributions to active electromagnetic materials and structures

Philip Ching Ho Chan

Hong Kong University of Science and Technology
Kowloon, Hong Kong
for contributions to the development of low-cost flip-chip technology

Abhijit Chatterjee

Georgia Institute of Technology
Atlanta, GA, USA
for contributions to testing analog and mixed signal circuits

Kun-Shan Chen

National Central University
Chungli, Tao-Yuan, Taiwan
for contributions to remote sensing image and signal processing

Jie Chen

University of California Riverside
Riverside, CA, USA
for contributions to fundamental design limitations of feedback control

Tsuan Chen

Carnegie Mellon University
Pittsburgh, PA, USA
for contributions to multidisciplinary multimedia signal processing

Victor C. Chen

US Naval Research Laboratory
Vienna, VA, USA
for contributions to time-frequency analysis for radar imaging and target feature extraction

C. L. Philip Chen

University of Texas
San Antonio, TX, USA
for contributions to intelligent manufacturing systems design and integration

Kwang-Cheng Chen

National Taiwan University
Taipei, Taiwan
for contributions to wireless broadband communications and wireless local area networks

Ben M. Chen

National University of Singapore
Singapore, Singapore
for contributions to linear systems theory, robust control theory, and industrial control applications

Yuhua Cheng

Siliconlinx, Inc.
Irvine, CA, USA
for contributions to metal-oxide-semiconductor field-effect transistor modeling and its industry applications in integrated circuit design

Akira Chiba

Tokyo University of Science
Noda, Chiba, Japan
for contributions to bearingless AC motor drives

Andrew A. Chien

Intel Corporation
Hillsboro, OR, USA
for contributions to high-performance cluster and grid computing software

William A. Chisholm

Kinetrics, Inc.
Toronto, Ontario, Canada
for contributions to extra high voltage transmission line performance assessment

Kwong-Kit Choi

US Army Research Laboratory
Adelphi, MD, USA
for contributions to quantum well infrared photodetector technology

Tat-Sing Paul Chow

Rensselaer Polytechnic Institute
Troy, NY, USA
for contributions to smart power semiconductor devices

Mo-Yuen Chow

Cary, NC, USA
for contributions to diagnostics and control in mechatronics

Grace Audrey Clark

Lawrence Livermore National Laboratory
Livermore, CA, USA
for contributions in block adaptive filtering

Robert P. Colwell

R & E Colwell & Associates
Portland, OR, USA
for technical leadership in turning novel computer architecture concepts into commercial processors

Pierre Comon

Centre National de la Recherche Scientifique (CNRS)
Sophia-Antipolis, France
for contributions to high-order statistics and blind techniques for signal processing

Melba M. Crawford

Purdue University
W. Lafayette, IN, USA
for applications of satellite data and airborne LIDAR imagery

Bill Curtis

Borland Software Corporation
Fort Worth, TX, USA
for contributions to software process improvement

Alessandro De Luca

Università di Roma "La Sapienza"
Roma, Italy
for contributions to modeling and control of robotic systems

Peter H.N. de With

van den Elsenstraat 67
The Netherlands
for contributions to compression techniques and architecture of television and recording systems

Anirudh Devgan

Magma Design Automation
Austin, TX, USA
for contributions to electrical analysis, and simulation of integrated circuits

Tadeusz P.Dobrowiecki

Budapest University of Technology and Economics
Budapest, Hungary
for contributions to intelligent measurement systems, artificial intelligence, and identification of nonlinear systems

Christopher Richard Doerr

Lucent Technologies - Bell Labs
Holmdel, NJ, USA
for contributions to planar lightwave circuits

David W. Dolfi

Avago Technologies
San Jose, CA, USA
for technical leadership in integrated optics and optical interconnects

James L. Drewniak

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Rolla, MO, USA
for contributions in electromagnetic interference coupling paths and numerical modeling for compatibility design

Ilya Dumer

University of California at Riverside
Riverside, CA, USA
for contributions to error-correcting codes

Michel Duval

Hydro Quebec (IREQ)
Montreal, Quebec, Canada
for contributions to electrical insulation and high voltage equipment

Charvaka Duvvury

Texas Instruments, Inc.
Plano, TX, USA
for contributions to electrostatic discharge devices and design protection methods for integrated circuit applications

Gary W.Elko

MH Acoustics: LLC
Summit, NJ, USA
for contributions to microphone array signal processing for communication systems

Atef Elsherbeni

The University of Mississippi
University, MS, USA
for contributions to computational electromagnetics, antenna and microwave applications

Kazumasa Enami

National Institute of Information and Communications Tech.
Universal Media Center
Tokyo, Japan
for contributions to content production technology in broadcasting

Vinko Erceg

Broadcom Corporation
Cardiff, CA, USA
for contributions to channel models for mobile and fixed wireless communications

John W. Estey

S&C Electric Company
Chicago, IL, USA
for leadership in development of power system distribution equipment

Leslie Thomas Falkingham

Vacuum Interrupters Limited
Rugby, Warwickshire, United Kingdom
for contribution to the development and commercialization of vacuum interrupter technology

Masoud Farzaneh

University of Quebec in Chicoutimi (UQAC)
Chicoutimi, Quebec, Canada
for leadership in the area of ice-covered insulator flashover mechanisms and development of application guidelines

Robert J. Fontana

Multispectral Solutions, Inc.
Germantown, MD, USA
for contributions to short pulse electromagnetics as applied to ultra wideband systems

Shangkai Gao

Tsinghua University, China
Beijing, China
for contributions to the study of brain-computer interface

Wanda Gass

Texas Instruments, Inc.
Dallas, TX, USA
for contributions to digital signal processors and circuits

Gerard J.Genello

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Rome, NY, USA
for leadership in the management of scientists and engineers

Fadhel M.Ghannouchi

University of Calgary
Calgary, Alberta, Canada
for contributions to advanced microwave amplification circuits and sub-systems

Giovanni Ghione

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for contributions to numerical physics-based modelling of passive and active integrated microwave components

Fulvio Gini

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for contributions to optimal radar signal processing techniques

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Los Alamos, NM, USA
for contributions to reconfigurable computing technology

Dmitry B. Goldgof

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for contributions to computer vision and biomedical applications

Avelino Juan Gonzalez

University of Central Florida
Winter Springs, FL, USA
for contributions to intelligent monitoring and diagnostics of power systems

James R. Goodman

University of Auckland
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for contributions to shared-memory multiprocessor system design

Steven Scott Gorshe

PMC Sierra Corp.
Beaverton, OR, USA
for invention and standardization of elements of optical transmission systems

Xiaohong Guan

Tsinghua University, China
Beijing, China
for contributions to optimization of hydrothermal generation scheduling

Ramesh K. Gupta

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Reston, VA, USA
for contributions to monolithic microwave integrated circuits

Zygmunt J. Haas

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Ithaca, NY, USA
for contributions to wireless and mobile ad-hoc networks

John H.L. Hansen

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Dallas, TX, USA
for contributions to speech recognition under stress and noise

Boudewijn R. Haverkort

University of Twente
Enschede, The Netherlands
for contributions to performance and dependability evaluation of computer and communication systems

Gordon Hayward

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Glasgow, Lanarkshire, United Kingdom
for contributions to the area of piezoelectric ultrasound transducers as applied in underwater sonar

Stefan Heinen

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Baesweiler, Germany, Germany
for contributions to radio frequency integrated circuits and wireless systems

Braham Himed

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for contributions to signal processing in multistatic radar

Richard C. Hochberg

Computer Sciences Corporation
Arlington, VA, USA
for leadership in engineering and management of advanced electronic systems

Hsiao-Wuen Hon

Microsoft Research
Beijing, China
for contributions to speech recognition research and product development

Davor Hrovat

Ford Motor Company /Research and Innovation Center
Dearborn, MI, USA
for contributions to automotive controls

Joseph L. A. Hughes

Georgia Institute of Technology
Atlanta, GA, USA
for contributions to engineering education program development, assessment, and accreditation activities

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West Yorkshire, United Kingdom
for contributions to theory and design of microwave filters

William Gerard Hurley

National University of Ireland, Galway
Galway, Ireland
for contributions to magnetic circuit design, planar magnetics, and high frequency transformer design

Seth Andrew Hutchinson

University of Illinois
Urbana, IL, USA
for contributions to visual servo control and robot motion planning

Umrhan Savas Inan

Stanford University
Stanford, CA, USA
for contributions to upper atmospheric physics

Yoshio Itaya

Nippon Telegraph and Telephone Corporation
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for contributions to high performance long-wavelength semiconductor lasers for optical communications

Hideto Iwaoka

Research Laboratory for Integrated Technical Systems
Tokyo, Japan
for leadership in developing optical devices and optical microelectro mechanical systems for sensing and measuring instruments

Charles Jackson

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Huntington Beach, CA, USA
for leadership in the development of high-temperature superconductor microwave devices, quasi-optical techniques, and millimeter-wave subsystems for space and imaging systems

Abbas Jamalipour

University of Sydney
Sydney, NSW, Australia
for contributions to next generation networks for traffic control

Mehdi Jazayeri

University of Lugano
Lugano, Switzerland
for contributions to programming languages, software engineering, and informatics education

William D. Jemison

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for contributions to microwave photonics for radar and communications

Mu-Der Jeng

National Taiwan Ocean University
Keelung, Taiwan
for applications of Petri nets to semiconductor manufacturing automation

Captain Colin M. Jones

USN (Retired)
Gainesville, FL, USA
for contributions to deep ocean exploration, search and recovery and salvage

Stamatis V. Kartalopoulos

Annapdale, NJ, USA
for contributions to digital broadband transmission, to digital communications control, and to advanced optical communications systems and networks

Takayuki Kawahara

Central Research Laboratory, Hitachi Ltd.
Kokubunji, Tokyo, Japan
for contributions to low-voltage low-power random access memory circuits

Zvi M. Kedem

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New York, NY, USA
for contributions to concurrent and parallel computing systems

Mustafa Khammash

University of California, Santa Barbara
Santa Barbara, CA, USA
for contributions to robust control and its applications

Bumman Kim

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Department of Electrical Engineering
Pohang, Gyeongbuk, Korea
for contributions to linear power amplifiers, gallium arsenide microwave and millimeter-wave power devices and monolithic microwave integrated circuits

Daniel S. Kirschen

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Manchester, United Kingdom
for contributions to analysis of power system economics and power system security

Isik C. Kizilyalli

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Raleigh, NC, USA
for contributions to integrated circuit technology

Cetin Kaya Koc

Istanbul, Turkey
for contributions to cryptographic engineering

Antonius M.J. Koonen

Technical University Eindhoven
Eindhoven, The Netherlands
for contributions in fiber-optic broadband access networks

Richard T. Kouzes

Pacific Northwest National Laboratory
Richland, WA, USA
for contributions to nuclear radiation detection systems

Ratnesh Kumar

Iowa State University
Ames, IA, USA
for contributions to discrete event system modeling, control, diagnosis and applications

Kenneth S. Kundert

Designer's Guide Consulting, Inc.
Los Altos, CA, USA
for contributions to simulation and modeling of analog radio frequency and mixed signal circuits

Sandip Kundu

University of Massachusetts
Amherst, MA, USA
for contributions to design of test methods for integrated circuits

Massimo La Scala

Politecnico di Bari
Bari, Italy
for contributions to computationally efficient power system dynamic performance simulation and control

John Lafferty

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Pittsburgh, PA, USA
for contributions to statistical pattern recognition and statistical language processing

R. (Inald) L. Lagendijk

Delft University of Technology
Delft, The Netherlands
for contributions to image processing

Loi Lei Lai

Middlesex, England, United Kingdom
for contributions to development of computational intelligence techniques to power system applications

Jih-Sheng Lai

Virginia Polytechnic Institute and State University
Blacksburg, VA, USA
for contributions to high performance high power inverters

Jean-Paul Laumond

Centre National de la Recherche Scientifique
Toulouse, France
for contributions to robot motion planning and control

Sang Uk Lee

School of Electrical Engineering and Computer Science
Seoul, Korea
for contributions to theory and application of image and video coding

Wei-Jen Lee

University of Texas at Arlington
Arlington, TX, USA
for contributions to engineering education and power system analysis

Steven B. Leeb

Massachusetts Institute of Technology
Cambridge, MA, USA
for contributions to modeling, design, analysis, and construction of servomechanisms

Wim Leemans

Lawrence Berkeley National Laboratory
Berkeley, CA, USA
for contributions to the field of advanced accelerators, in particular laser-plasma acceleration of electrons

Naomi Ehrich Leonard

Princeton University
Princeton, NJ, USA
for contributions to control of underwater vehicles

Shuo-Yen Robert Li

The Chinese University of Hong Kong
Hong Kong, Hong Kong
for contributions to network coding and switching theories

Ming Li

University of Waterloo
Waterloo, Ontario, Canada
for contributions in kolmogorov complexity and its applications

Jerome Zhengrong Liang

State University of New York at Stony Brook
Stony Brook, NY, USA
for contributions to medical image reconstruction and virtual colonoscopy

Zongli Lin

University of Virginia
Charlottesville, VA, USA
for contributions to linear and nonlinear control theory

Bao-Shuh P. Lin

Information and Communications Research Labs. (ICL)
Industrial Technology Research Institute (ITRI)
Hsinchu, Taiwan
for leadership in technology and industry development of broadband information network and digital video

Zhen Liu

IBM T.J. Watson Research Center
Hawthorne, NY, USA
for contributions to evaluation and optimization of parallel and distributed systems

Hui Chun Liu

National Research Council of Canada
Ottawa, Ontario, Canada
for contributions to resonant tunneling and intersubband quantum devices

Tsu-Jae King Liu

University of California, Berkeley
Berkeley, CA, USA
for applications of silicon-germanium thin films to metal oxide semiconductor transistors and microelectro mechanical systems

Leo Lorenz

Infineon Technologies China Co. Ltd.
Shanghai, China
for contributions to insulated gate and bipolar transistors modules and ultra-fast switching devices in power electronics

Alexander Loui

Eastman Kodak Company
Penfield, NY, USA
for contributions to digital image content management systems

Zhi-Quan Luo

University of Minnesota
Minneapolis, MN, USA
for contributions to modern optimization and its applications in signal processing and digital communications

Jusheng Ma

Tsinghua University, China
Beijing, China
for contributions to electronic materials and packaging technology

Peter P. Magyar

Oerlinhausen, Germany
for contributions to digital control of electrical drive systems

Michael L. Mallary

Maxtor Corporation
Sterling, MA, USA
for contributions to recording devices

Jaakko Malmivuo

Ragnar Granit Institute
Helsinki, Tampere, Finland
for contributions to theoretical and experimental aspects of bioelectromagnetic phenomena

Robert T. Menzies

Pasadena, CA, USA
for contributions to laser radar technology and laser remote sensing

Katsumi Midorikawa

RIKEN (The Institute of Physical and Chemical Research)
Wako, Saitama, Japan
for contributions to generation of intense coherent soft x-ray radiation

<p>Pratap N. Misra MIT Lincoln Laboratory Lexington, MA, USA for contributions to global satellite navigation systems</p> <p>Urbashi Mitra University of Southern California Los Angeles, CA, USA for contributions to multiuser wideband digital communication systems</p> <p>Mitiko Miura-Mattausch Hiroshima University Higashi-Hiroshima, Hiroshima, Japan for contributions to nanoscale metal oxide semiconductor field effect transistor compact modeling</p> <p>Claude H. Moog Centre National de la Recherche Scientifique Nantes, France for contributions to the algebraic theory of nonlinear control systems</p> <p>Marc Moonen Katholieke Universiteit Leuven Leuven, Belgium for contributions to adaptive filtering algorithms for digital communications and audio signal processing</p> <p>Warren Bicknell Mori University of California, Los Angeles Los Angeles, CA, USA for contributions to plasma physics</p> <p>Biswanath Mukherjee University of California, Davis Davis, CA, USA for contributions to architectures, algorithms, and protocols for optical networks</p> <p>Alan Fraser Murray University of Edinburgh Edinburgh, Scotland, United Kingdom for contributions to neural and neuromorphic very large scale integrated implementations, algorithms and applications</p> <p>Ayman Naguib Qualcomm, Incorporated Campbell, CA, USA for contributions to space-time signal processing and coding for mobile wireless systems</p> <p>Walid Najjar University of California, Riverside Riverside, CA, USA for contributions to dataflow and reconfigurable computing architectures</p> <p>Robert D. Nevels Texas A&M University College Station, TX, USA for contributions to electromagnetic field theory for quantum mechanics</p> <p>Clark T.-C. Nguyen Dept. of Electrical Engineering and Computer Sciences Berkeley, CA, USA for contributions to the physics and technology of microelectromechanical systems</p> <p>Dalma Novak Pharad, LLC Glen Burnie, MD, USA for contributions to enabling technologies for the implementation of fiber radio systems</p> <p>Carlo Alberto Nucci Department of Electrical Engineering Bologna, Italy for contributions to analysis and modeling of lightning originated phenomena in power systems</p> <p>Mark Joseph O' Malley University College - Dublin Belfield, Ireland for contributions to modeling and control of renewable energy on island power systems</p> <p>Shinji Odanaka Osaka University Toyonaka, Osaka, Japan for contributions to numerical modeling and simulation of scaled complementary metal oxide semiconductor integrated circuit processes and devices</p>	<p>Hiroyo Ogawa National Institute of Information and Communications Technology (NICT) Yokosuka, Kanagawa, Japan for contributions to microwave and millimeter-wave technology</p> <p>Aaron Oki Northrop Grumman Corporation Redondo Beach, CA, USA for technical innovation in advancing gallium arsenide and indium phosphide microelectronics technology</p> <p>Abbas Omar University of Magdeburg Magdeburg, Germany for contributions to techniques for the analysis of microwave structures</p> <p>Avoki M. Omekanda Rochester, MI, USA for contributions to robust optimization of switched reluctance machines</p> <p>Antonio Orlandi University of L'Aquila L'Aquila, , Italy for contributions to high-speed digital systems</p> <p>Antonio Ortega University of Southern California Los Angeles, CA, USA for contributions to image and video communications</p> <p>Yaakov Oshman Technion — Israel Institute of Technology Haifa, Israel for contributions to information fusion and estimation theory for aerospace applications</p> <p>Gaetano Palumbo University of Catania Catania, Italy for contributions to analysis and design of high performance analog and digital circuits</p> <p>Xiaochuan Pan The University of Chicago Chicago, IL, USA for contributions to nuclear and non-invasive imaging</p> <p>Nikolaos Papanikolopoulos University of Minnesota, Computer Science and Engineering Minneapolis, MN, USA for contributions to distributed robotics and the creation of the miniature scout robot</p> <p>Dean Patterson University of Nebraska Lincoln, NE, USA for contributions to the design of permanent magnet machines and power electronics education</p> <p>Ronald L. Pease RLP Research Los Lunas, NM, USA for contributions to radiation response of microelectronic devices, circuits, and systems</p> <p>Jose Carlos Pedro Universidade de Aveiro Aveiro, Portugal for contributions to nonlinear distortion analysis of microwave devices and circuits</p> <p>William Arthur Penn Syracuse University Baldwinsville, NY, USA for contributions to electronic and electro-optical systems for detection and communication</p> <p>Ioannis Pitas Aristotle University of Thessaloniki Thessaloniki, Greece for contributions to nonlinear signal and image processing, digital watermarking and biometrics</p> <p>David V. Plant McGill University Montreal, Quebec, Canada for contributions to optoelectronic devices</p> <p>Andrew S. Podgorski ASR Technologies, Inc. New Mexico, USA for contributions to broadband immunity and compatibility certification</p>	<p>Carlos Manuel Portela Federal University of Rio de Janeiro Rio de Janeiro, RJ, Brazil for contributions to high voltage engineering for power transmission and distribution</p> <p>Jayasimha Swamy Prasad Maxim Integrated Products San Jose, CA, USA for contributions to compound semiconductor heterojunction bipolar transistors</p> <p>Ruchir Puri IBM Thomas J. Watson Research Center Yorktown Heights, NY, USA for contributions to automated logical and physical design of electronic circuits</p> <p>Li Qiu Hong Kong University of Science and Technology Kowloon, Hong Kong for contributions to robust and optimal control of multirate and periodic systems</p> <p>Tawfik M Rahal-Arabi Intel Corporation Tigard, OR, USA for contributions in the area of microprocessor high speed bus and power delivery designs</p> <p>Ramachandran (Ram) Ramjee Tamilnadu, India for contributions to architecture, protocols, and performance of wireless networks</p> <p>Nalini K. Ratha IBM Thomas J. Watson Research Center Hawthorne, NY, USA for contributions to biometric authentication systems</p> <p>Thomas Joseph Richardson Flarion Technologies Bedminster, NJ, USA for contributions to coding theory and practice</p> <p>Nabeel A. Riza UCF, College of Optics & Photonics Orlando, FL, USA for contributions to acousto-optic, liquid crystal, and micromirror device applications in photonic signal processing and controls</p> <p>James A. Rooks J & R Consulting Inc. Tigard, OR, USA for leadership in engineering applications in the pulp and paper industry</p> <p>Christopher Rose Wireless Information Laboratory, Rutgers University North Brunswick, NJ, USA for contributions to wireless communication systems theory</p> <p>Keith W. Ross Polytechnic University Brooklyn, NY, USA for contributions to design and analysis of computer networks</p> <p>Mario A. Rotea West Lafayette, IN, USA for contributions to robust and optimal control of multivariable systems</p> <p>Tom Robert Rowbotham Vesbridge Partners Suffolk, England, United Kingdom for leadership in communications research and development commercialization and international industry cooperation</p> <p>Sumit Roy University of Washington Seattle, WA, USA for contributions to multi-user communications theory and cross-layer design of wireless networking standards</p> <p>Daniel Rugar IBM Research Division San Jose, CA, USA for contributions to magnetic and magnetic-resonance force microscopy</p>
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Stefan Rusu

Intel Corporation
Santa Clara, CA, USA
for contributions to high performance microprocessor circuit technologies

Brian M. Sadler

Army Research Laboratory
Adelphi, MD, USA
for contributions to signal processing and sensor networks

Alan V. Sahakian, Ph.D

Northwestern University
Evanston, IL, USA
for contributions to electrophysiology of atrial cardiac arrhythmias

Sudhakar Chintaman Sahasrabudhe

Dhirubhai Ambani Institute of Information and Communication Technology
Gandhinagar, Gujarat, India
for academic leadership in creating and managing an electrical engineering education system

Hideaki Sakai

Kyoto University
Kyoto, Japan
for contributions to statistical and adaptive signal processing

Betty Joan Salzberg

Northeastern University
Boston, MA, USA
for contributions to access methods, online re-organization methods, and robust application techniques in computing

Seiichi Sampei

Osaka University
Suita-shi, Osaka, Japan
for contributions to the development of fading compensation and adaptive modulation techniques for wireless communication systems

Pasqualina M. Sarro

Delft University of Technology
Delft, The Netherlands
for contributions to micromachined sensors, actuators, and microsystems

Ned Robert Sauthoff

Princeton, NJ, USA
for contributions to plasma physics and fusion energy

Jose E Schutt-Aine

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for contributions to modeling and simulation of distributed circuits with applications to signal integrity

Hans-Paul Schwefel

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Dortmund, , Germany
for contributions to evolutionary computation

Nava Setter

EPFL – Swiss Federal Institute of Technology
Lausanne, Switzerland
for contributions to field of ferroelectric materials, microsystems and microelectronics applications

Joseph Shappir

Hebrew University of Jerusalem
Jerusalem, Israel
for contributions to common metal oxide semiconductor process technology, and floating-gate devices.

John W. Sheppard

ARINC Incorporated
Pasadena, MD, USA
for contributions to system-level diagnosis and prognosis

Kiyohiro Shikano

Nara Institute of Science and Technology
Ikoma, Nara, Japan
for contributions to speech recognition, dialog systems, voice conversion, and acoustic field realization

Ness B. Shroff

Purdue University
West Lafayette, IN, USA
for contributions to the modeling, analysis and control of computer communication networks

Robert D. Shull

National Institute of Standards and Technology
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for contributions to nanocomposites, superconductors, and magnetocaloric materials

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Sydney, New South Wales, Australia
for contributions to high speed devices and systems for wireless and wireline communications networks

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for contributions to multimedia content analysis, retrieval and adaptation

Nagu Srinivas

DTE Energy Technologies
Novi, MI, USA
for contributions to assessment of vulnerability of aged extruded dielectric power cables by direct current testing

Ioannis Stavrakakis

University of Athens, Greece
Athens, Greece
for contributions to network traffic analysis and resource allocation methodologies

Per Stenstrom

Chalmers University of Technology
Goteborg, Sweden
for contributions to design of high-performance memory systems

James C. Stoffel

Consultant
Rochester, NY, USA
for technical leadership in the development of imaging systems

Athanasios Stouraitis

University of Patras
Rio, Greece
for contributions to high-performance digital signal processing architectures and computer arithmetic

Yan-Kuin Su

National Cheng Kung University
Dept. of Electrical Engineering
Tainan City, Taiwan
for contributions to optoelectronics and nanophotonics research and education

Shigeki Sugano

Waseda University
Tokyo, Japan
for contributions to design, control and system integration of human symbiotic robots

Toshiharu Sugie

Kyoto University
Uji, Kyoto, Japan
for contributions to tracking control and its application to mechanical systems

Sehat Sutardja

Marvell Semiconductor, Inc.
Santa Clara, CA, USA
for leadership in design and commercialization of highspped mixed-signal common metal oxide semiconductors integrated circuits

Peter Edward Sutherland

GE Energy Services
Schenectady, NY, USA
for contributions to harmonic analysis in electrical power systems

Venkataraman Swaminathan

US ARMY Armaments Research, Development & Engineering Center
Picatinny, NJ, USA
for contributions to the field of optoelectronic materials, devices, and systems

F. Dong Tan

Northrop Grumman Space Technology (NGST)
Redondo Beach, CA, USA
for contributions to high efficiency forward converters

Gang Tao

University of Virginia
Charlottesville, VA, USA
for contributions to adaptive control theory and application to aircraft control

Leandros Tassioulas

University of Thessaly
Volos, Greece
for contributions to algorithms, protocols and architectures of wireless communication networks

John T. Tengdin

Opus Publishing
San Clemente, CA, USA
for leadership in Ethernet local area network based protective relaying and control in electric power substations

Reiner S. Thomä

Ilmenau University of Technology
Ilmenau, Thüringen, Germany
for contributions to high-resolution multidimensional channel sounding

Scott E. Thompson

University of Florida
Gainesville, FL, USA
for contributions to common metal oxide semiconductor technology for high-volume manufacturing

Charles Thorpe

Carnegie Mellon University
Pittsburgh, PA, USA
for leadership in research and development of vision-based autonomous outdoor vehicles

Michael Edmund Tobar

University of Western Australia
Crawley, WA, Australia
for contributions to high-Q dielectric resonator technology, precision microwave oscillators and low noise phase and amplitude measurement systems

Masamitsu Tokuda

Musashi Institute of Technology
Tokyo, Japan
for leadership in development and international standardization of electromagnetic compatibility for telecommunication systems

Kevin L. Tomsovic

Washington State University
Pullman, WA, USA
for contributions to intelligent systems in power engineering

Ho-Ming Tong

Advanced Semiconductor Engineering (ASE) Group
Kaohsiung, , Taiwan
for leadership in leading-edge integrated circuits technology

M. Selim Ünlü

Boston University
Boston, MA, USA
for contributions to optoelectronic devices

Raman Menon Unnikrishnan

California State University, Fullerton
Fullerton, CA, USA
for contributions to automatic control systems and power electronic education

Tamaki Ura

University of Tokyo
Meguro-ku, Tokyo, Japan
for contributions to autonomous underwater vehicle technologies

Paris W. Vachon

Defence R&D Canada – Ottawa (Government)
Ottawa, Ontario, Canada
for contributions to operational marine applications of imaging radar

Annamaria Varkonyi-Koczy

Budapest University of Technology and Economics
Budapest, Hungary
for contributions to digital signal processing in measurement and control

Rodney G. Vaughan

Simon Fraser University
Burnaby, British Columbia, Canada
for contributions to the theory and design of antennas, diversity systems and signal processing techniques for mobile communications

Jan Verspecht

Jan Verspecht bvba
Londerzeel, Belgium
for contributions to the area of large-signal microwave measurements

Maximus Alexander Viergever

University Medical Center Utrecht
Utrecht, The Netherlands
for leadership and contributions to medical imaging

Bo Wahlberg

Royal Institute of Technology, Stockholm
Stockholm, Sweden
for contributions to system identification using orthonormal basis functions

Jun Wang

The Chinese University of Hong Kong
Hong Kong, S.A.R., Hong Kong
for contributions to recurrent neural networks for optimization and engineering applications

Michael Yu Wang

The Chinese University of Hong Kong
Shatin, N.T., Hong Kong
for contributions to frictional contact and impact modeling, and robotic workholding and fixturing, for manufacturing automation

Roland H. W. Watkins

Cable Solutions
Oldsmar, FL, USA
for leadership in development of category system for globally classifying performance of data cable

Marcelo J. Weinberger

Hewlett-Packard Laboratories
Palo Alto, CA, USA
for contributions to data compression

Harold Weinstock

Arlington, VA, USA
for leadership in superconducting magnetometry

Kyu-Young Whang

Korea Advanced Institute of Science and Technology
Daejeon, Korea
for contributions to physical database design, query processing, and database management system architecture

Jeffrey E. Wieselthier

Silver Springs, MD, USA
for contributions to wireless ad hoc and energy-aware networking

Kin-Lu Wong

National Sun Yat-Sen Univ., Taiwan
Kaohsiung, Taiwan
for contributions to microstrip and planar antenna designs

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National Research Council of Canada
Ottawa, Ontario, Canada
for contributions to fundamental electrical measurement standards

John Wood

Freescale Semiconductor, Inc
Tempe, AZ, USA
for contributions to the nonlinear microwave device and behavioral modeling, and technology

Murray Woodside

Carleton University
Ottawa, Ontario, Canada
for contributions to real-time software system performance engineering

Kun-Lung Wu

IBM T. J. Watson Research Center
Hawthorne, NY, USA
for contributions to derived data management for reliable computing, web-based information systems, and transaction and query processing

Chwan-Hwa “John” Wu

Auburn University
Auburn, AL, USA
for contributions to secure communication and multimedia systems

Ning Xi

Michigan State University
East Lansing, MI, USA
for contributions to nano-robotic manipulation and assembly

Lihua Xie

Nanyang Technological University
Singapore, Singapore
for contributions to robust control and filtering

Zixiang Xiong

Texas A&M University
College Station, TX, USA
for contributions to source and channel coding

Orly Yadid-Pecht

Ben Gurion University of the Negev
Beer Sheva, Israel
for contributions to design and modeling of common metal oxide semiconductors image sensors

Hiroshi Yamada

Toshiba Corporation
Kawasaki, Kanagawa, Japan
for contributions to packaging technology of integrated circuits

Masakazu Yamashina

NEC Electronics Corporation
Kawasaki, Kanagawa, Japan
for leadership in high performance microprocessor circuits

Jar-Ferr Kevin Yang

National Cheng Kung University
Tainan, Taiwan
for contributions to fast algorithms and efficient realization of video and audio coding

Sung-Joo Ben Yoo

University of California, Davis
Davis, CA, USA
for contributions to optical networking including wavelength conversion, optical label switching networks, optical routers, and integrated photonics

Bin Yu

Center for Nanotechnology
NASA Ames Research Center
Moffett Field, CA, USA
for contributions to scaling of silicon common metal oxide semiconductor transistors

Yuang-Ting Zhang

The Chinese University of Hong Kong
Shatin, N.T., Hong Kong
for contributions to the field of wearable devices and signal processing algorithms for mobile healthcare

Qiming Zhang

Pennsylvania State University
University Park, PA, USA
for contribution to ferroelectric materials

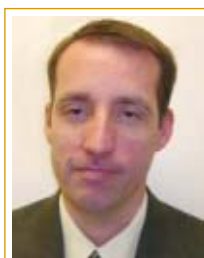
Michele Zorzi

Department of Information Engineering
Padova, Italy
for contributions in the area of energy efficient protocol design

Moshe Zukerman

University of Melbourne
Melbourne, Victoria, Australia
for contributions to performance evaluation of communication systems and networks

IEEE STAFF AWARDS



2006 Joyce E. Farrell
IEEE Staff Award

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Doug Gischlar,
IEEE Publishing Technologies

Doug Gischlar joined the IEEE in 2001 as a project manager in Publishing Technology. He was later named Web Development Manager and, in October 2004, he was named Manager, Software Development. Among Doug's primary responsibilities is support for the maintenance and upgrading of the IEEE Xplore platform, and he has contributed greatly to its capabilities.

At the presentation, Doug expressed his gratitude to his co-workers in Application Development, in Publications and IT. "I couldn't have accomplished a quarter of what I have done without their contributions," he said.

IEEE Enabling Culture Principles

- Member No. 1 & Customer Focus
- Respect for the Employee and Volunteer
- Teamwork
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- Participatory Management
- Accountability & Our Word Is Our Bond
- Innovation & Continuous Improvement
- Open, Honest Communication & Feedback

The Joyce E. Farrell IEEE Staff Award was established in 1996, and it is presented annually for exemplary professional performance and consistent practice of the IEEE Enabling Culture. Recipients receive a certificate, engraved sterling silver bowl and honorarium.

Past recipients include:

- 2005 – John Gulics, IEEE Facilities
- 2004 – W. Henry Buchheit, IEEE Computer Society
- 2003 – Beverly Banks, IEEE Sales & Marketing
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Thomas W. Bartlett

For developing and implementing, during his 47 years of service, financial management systems that contributed uniquely to growth and achievements of IEEE

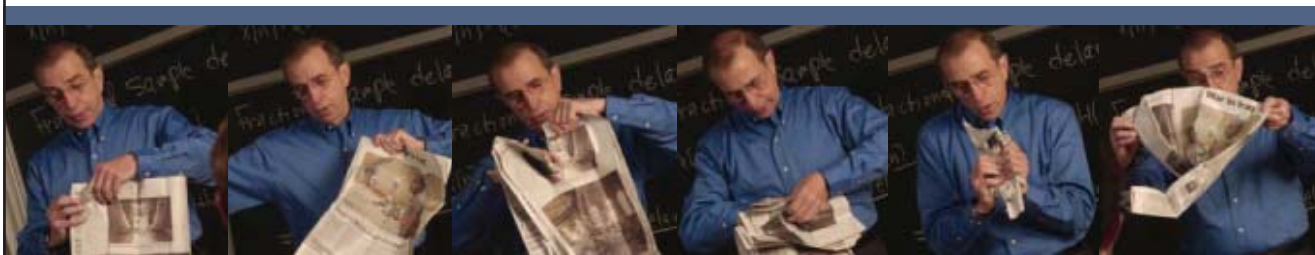
Thomas Bartlett is the longest-serving employee in the history of the IEEE. In 1946, he joined the American Institute of Electrical Engineers (AIEE) as a shipping clerk, and over his 47 years of service he played pivotal roles in the organization's continued growth and improvement, including the merger of the AIEE and Institute of Radio Engineers (IRE), which formed the IEEE, in 1963. During his career, he held many executive positions including Accounting Manager, Controller, and Associate General Manager for Finance & Administration. Among his many achievements, he created a new financial reporting system following the establishment of the IEEE, negotiated in legal proceedings on behalf of the organization, and built the internal control systems that to this day sustain the IEEE Society infrastructure.

Mr. Bartlett was known for his dedication and professionalism, which set high standards for his IEEE colleagues as well as the volunteers with whom he regularly interacted.

The IEEE Eric Herz Outstanding Staff Member Award was established in 2005 and named in honor of Eric Herz, who has had a long and illustrious career as both a volunteer and staff member of the IEEE. The award is presented to a present or past full time staff member who has demonstrated contributions over a long period of time. The award consists of a certificate, honorarium, and travel expenses to attend the presentation of the award at the last IEEE Board of Directors Meeting of the year. The award was presented for the first time in 2006.

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Your colleagues, students and friends at the Research Laboratory of Electronics (RLE) at the Massachusetts Institute of Technology (MIT) join the IEEE in honoring your achievements and contributions to science and engineering. The Jack S. Kilby Signal Processing Medal celebrates your accomplishments, and so do we. Congratulations, Al.

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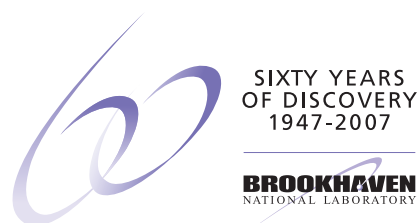


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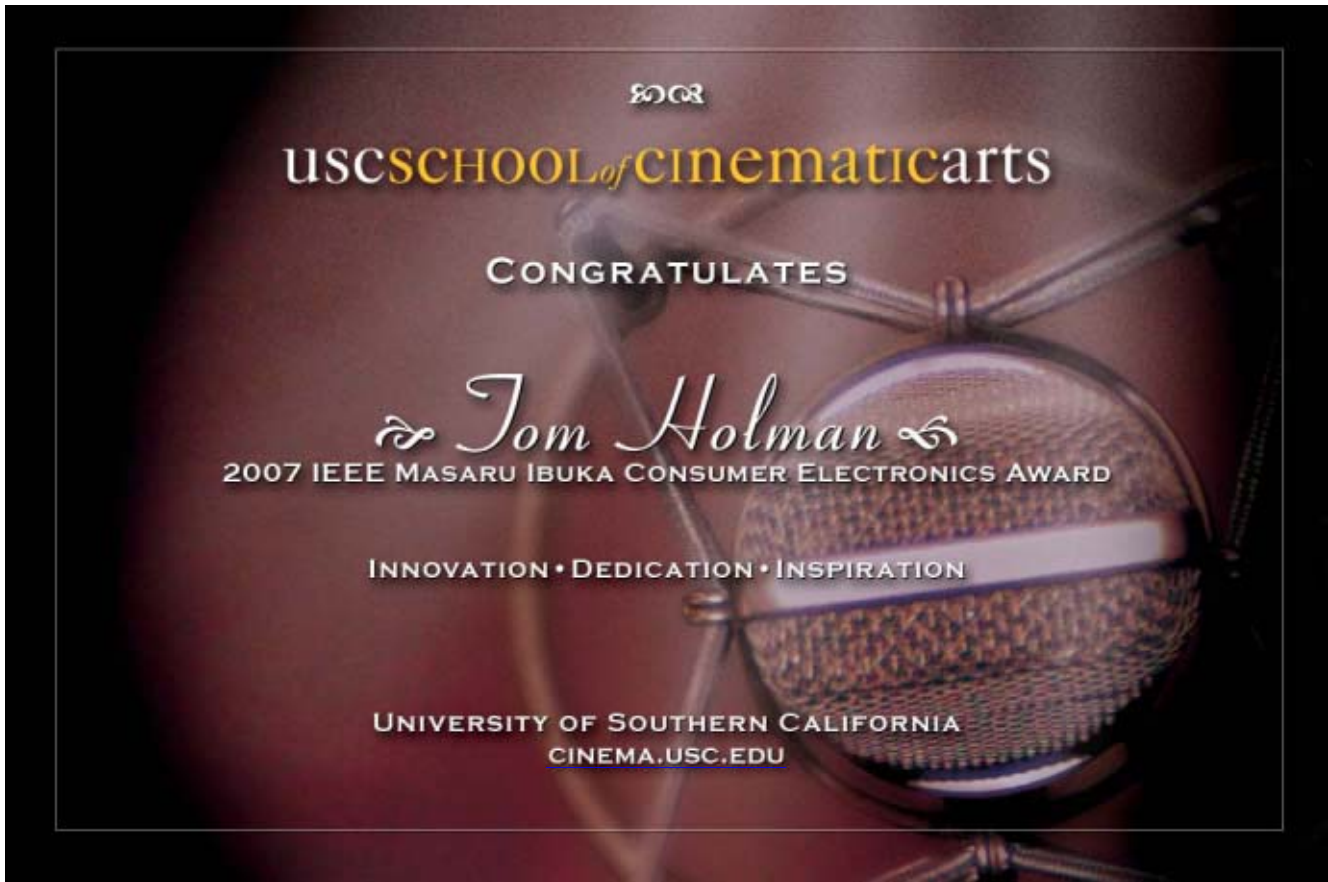
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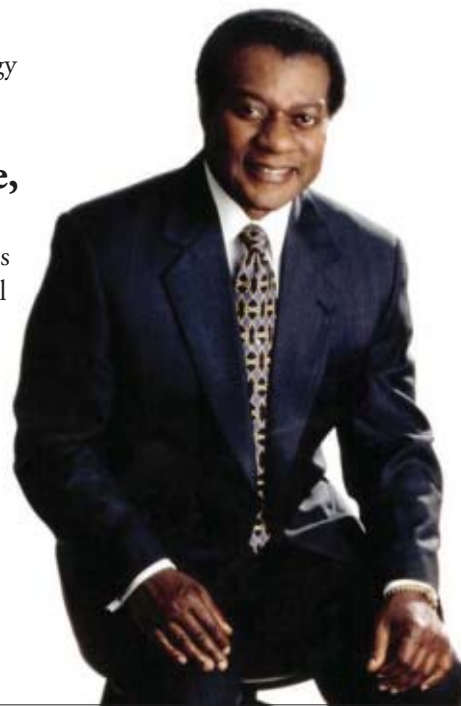
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(iNetS) in the Schaefer School
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on the occasion of his receipt
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Tyco Electronics congratulates Dimitry Grabbe, recipient of the IEEE Components, Packaging and Manufacturing Technology Award, and all of this year's IEEE Awardees.



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Congratulations

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“for development of the theory and applications of the fuzzy c-means and related pattern recognition methods”



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Dr. Paul offers a shining example of the School's commitment to its students and their education.

Named one of the top undergraduate engineering schools in the Southeast by *U.S. News & World Report* for the past eight years, the **Mercer School of Engineering** is known for producing graduates ready to work in industry or pursue graduate studies. The School's innovative curriculum emphasizes teamwork as well as opportunities to gain hands-on experiences. Mercer engineering graduates are known for their strong communication skills, as Mercer is one of few engineering institutions in the nation to house a Technical Communication Department within the Engineering School.



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Congratulations to **Allen Gersho** for winning the IEEE James L. Flanagan Speech & Audio Processing Award for applications to the theory and application of speech coding.



Gersho, research professor at the **University of California, Santa Barbara**, has been one of the leading contributors to the areas of speech coding and signal compression. His applications have been instrumental to Internet voice, audio for video conferencing and secure voice terminals for government and military areas. His work in vector quantization, a powerful tool for data compression, has improved the efficiency of speech coding by achieving high-quality speech at very low bit rates.



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Congratulations to

Professor Emeritus

Dr. Norman Abramson

upon receiving the

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From his friends and associates at the

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The IEEE Awards are given each year to recognize the achievements, contributions, and impact of electrical and electronics engineering on technology and society. Recipients are selected by committees whose members are also highly skilled and recognized for their achievements.



The IEEE has many awards, but those captured in this book are the top honors that IEEE bestows.

Traditionally the IEEE Institute-level Medals are conveyed at the annual IEEE Honors Ceremony, where the recipients are applauded by their fellow engineers and scientists for their work in industry, research, education, or service.



1



2



3

THE RECIPIENTS OF 2006 WERE HONORED BY THE IEEE BOARD OF DIRECTORS DURING THE IEEE HONORS CEREMONY IN MINNEAPOLIS, MN, USA.

The IEEE Medal of Honor—the most prestigious IEEE award—was presented to Dr. James D. Meindl, Director and Petit Chair Professor of Microelectronics, Microelectronics Research Center, Georgia Institute of Technology, Atlanta, GA, USA.

1 2006 IEEE Honors Ceremony IEEE Award Recipients:

1st row, left: 2007 IEEE President-Elect, Leah H. Jamieson; Hideo Sunami; Kiyoo Itoh; Mitsumasa Koyanagi; Donald Wetzler; 2006 IEEE President, Michael Lightner

2nd row, left: Toshiharu Aoki; Thomas Kailath; James Meindl; CEO for ARM Limited, Warren East

3rd row, left: Fawwaz Ulaby; Sanjit Mitra; John Wozencraft; Donald Bolle; Eli Brookner; Tsuneo Nakahara; Harry Mergler; Shoichiro Yoshida; Antonio Bastos; Ed Catmull; Vladimir Rokhlin

2 2006 IEEE President, Michael Lightner and James Meindl

3 Eta kappa Nu Recipients: Tsuneo Nakahara; 2006 Eta Kappa Nu Vice-President, J. David Irwin; Harry Mergler

2006 IEEE AWARDS

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