



## **2018 IEEE Technical Field Award Recipients and Citations**

1. **IEEE BIOMEDICAL ENGINEERING AWARD**—recognizes outstanding contributions to the field of biomedical engineering—sponsored by the *IEEE Circuits and Systems Society* and *IEEE Engineering in Medicine and Biology Society*—to

### **Recipient**

**MARK S. HUMAYUN** (FIEEE)—Professor, Department of Biomedical Engineering and Ophthalmology, University of Southern California, Los Angeles, California, USA

### **Citation**

“For contributions to the bioelectronic retinal implant.”

2. **IEEE CLEDO BRUNETTI AWARD**—recognizes outstanding contributions to miniaturization and nanotechnology in the electronic arts—sponsored by the *Brunetti Bequest*—to

### **Recipient**

**SIEGFRIED SELBERHERR** (FIEEE)—Professor, Vienna University of Technology, Institute for Microelectronics, Vienna, Austria

### **Citation**

“For pioneering contributions to Technology Computer Aided Design.”

3. **IEEE COMPONENTS, PACKAGING, AND MANUFACTURING TECHNOLOGY AWARD**—recognizes meritorious contributions to the advancement of components, electronic packaging, or manufacturing technologies—sponsored by the *IEEE Electronics Packaging Society*—to

### **Recipient**

**WILLIAM CHEN** (LFIEEE)—Fellow of ASE Group, Sunnyvale, California, USA

### **Citation**

“For contributions to electronic packaging from research and development through industrialization, and for his leadership in strategic roadmapping efforts.”

4. **IEEE CONTROL SYSTEMS AWARD**—recognizes outstanding contributions to control systems engineering, science, or technology—sponsored by the *IEEE Control Systems Society*—to

**Recipient**

**JOHN TSITSIKLIS** (FIEEE)—Clarence J. Lebel Professor of Electrical Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA

**Citation**

“For contributions to the theory and application of optimization in large dynamic and distributed systems.”

5. **IEEE ELECTROMAGNETICS AWARD**—recognizes outstanding contributions to electromagnetics in theory, application, or education—sponsored by the *IEEE Antennas and Propagation Society*, *IEEE Electromagnetic Compatibility Society*, *IEEE Geoscience and Remote Sensing Society*, and *IEEE Microwave Theory and Techniques Society*—to

**Recipient**

**TATSUO ITOH** (LFIEEE)—Distinguished Professor and Northrop Grumman Chair in Electrical Engineering, University of California, Los Angeles, California, USA

**Citation**

“For contributions to electromagnetic modelling, artificial materials, microwave electronics, and antennas.”

6. **IEEE JAMES L. FLANAGAN SPEECH AND AUDIO PROCESSING AWARD**—recognizes outstanding contribution to the advancement of speech and/or audio signal processing—sponsored by the *IEEE Signal Processing Society*—to

**Recipient**

**MARI OSTENDORF** (FIEEE)—Professor, Electrical Engineering Department, University of Washington, Seattle, Washington, USA

**Citation**

“For contributions to statistical and computational models for analysis, interpretation, and synthesis in speech and language processing.”

7. **IEEE FOURIER AWARD FOR SIGNAL PROCESSING**—recognizes an outstanding contribution to the advancement of signal processing, other than in the areas of speech and audio processing—sponsored by the *IEEE Circuits and Systems Society* and the *IEEE Signal Processing Society*—to

**Recipient**

**PETER STOICA** (FIEEE)—Professor of System Modeling, Division of Systems and Control, Uppsala University, Uppsala, Sweden

### **Citation**

"For broad contributions to research and education in statistical signal processing and its applications."

8. **IEEE ANDREW S. GROVE AWARD**—recognizes outstanding contributions to solid-state devices and technology—sponsored by the *IEEE Electron Devices Society*—to

### **Recipient**

**GURTEJ S. SANDHU** (FIEEE)—Senior Fellow, Director, Emerging Memory Technologies R&D, Micron Technology Inc., Boise, Idaho, USA

### **Citation**

"For contributions to silicon CMOS process technology that enable DRAM and NAND memory chip scaling."

9. **IEEE HERMAN HALPERIN ELECTRIC TRANSMISSION AND DISTRIBUTION AWARD**—recognizes outstanding contributions to electric transmission and distribution—sponsored by the *Robert and Ruth Halperin Foundation, in memory of Herman and Edna Halperin*, and the *IEEE Power & Energy Society*—to

### **Recipient**

**JINLIANG HE** (FIEEE)—Professor, Department of Electrical Engineering, Tsinghua University, Beijing, China

### **Citation**

"For contributions to lightning protection of power transmission systems, including advancing analytic methods and innovation in line surge arresters."

10. **IEEE MASARU IBUKA CONSUMER ELECTRONICS AWARD**—recognizes outstanding contributions in the field of consumer electronics technology—sponsored by *Sony Corporation*—to

### **Recipient**

**LINUS BENEDICT TORVALDS** (non-member)—Fellow, Linux Foundation, San Francisco, California, USA

### **Citation**

"For his leadership of the development and proliferation of Linux."

11. [\*\*IEEE INTERNET AWARD\*\*](#)—recognizes exceptional contributions to the advancement of Internet technology for network architecture, mobility, and/or end-use applications—sponsored by *Nokia Corporation*—to

**Recipient**

**RAMESH GOVINDAN** (FIEEE)—Northrop-Grumman Chair in Engineering, Professor of Computer Science and Electrical Engineering, University of Southern California, Los Angeles, California, USA

**Citation**

“For sustained contributions to the dynamic analysis of the Internet (protocols, topologies, configurations) and the Internet of Things (sensor networks).”

12. [\*\*IEEE RICHARD HAROLD KAUFMANN AWARD\*\*](#)—recognizes outstanding contributions in industrial systems engineering—sponsored by the *IEEE Industry Applications Society*—to

**Recipient**

**GREG CHARLES STONE** (FIEEE)—Dielectrics Engineer, Iris Power-Qualitrol, Mississauga, Canada

**Citation**

“For advancements in rotating machines insulation evaluation and testing.”

13. [\*\*IEEE JOSEPH F. KEITHLEY AWARD IN INSTRUMENTATION AND MEASUREMENT\*\*](#)—recognizes outstanding contributions in electrical measurements—sponsored by *Keithley Instruments, a Tektronix company*. and the *IEEE Instrumentation and Measurement Society*—to

**Recipient**

**DAVID WAYNE ALLAN** (LSIEEE)—President, Allan's Time Interval Metrology Enterprise, Fountain Green, Utah, USA

**Citation**

“For leadership in time determination and precise timing instruments.”

14. [\*\*IEEE GUSTAV ROBERT KIRCHHOFF AWARD\*\*](#)—recognizes an outstanding contribution to the fundamentals of any aspect of electronic circuits and systems that has a long-term significance or impact—sponsored by the *IEEE Circuits and Systems Society*—to

**Recipient**

**ALAN WILLSON, JR.** (LFIEEE)—Charles P. Reames Research Professor, University of California Los Angeles, Los Angeles, California

**Citation**

"For fundamental contributions to the theory and design of nonlinear circuits and signal processing systems."

15. [\*\*IEEE LEON K. KIRCHMAYER GRADUATE TEACHING AWARD\*\*](#)—recognizes inspirational teaching of graduate students in the IEEE fields of interest—sponsored by the *Leon K. Kirchmayer Memorial Fund*—to

**Recipient**

**MARK S. LUNDSTROM** (LFIEEE)—Carol Scifres Distinguished Professor, School of Electrical and Computer Engineering, Purdue University, West Lafayette, Indiana, USA

**Citation**

"For creating a global online community for graduate education in nanotechnology as well as teaching, inspiring, and mentoring graduate students."

16. [\*\*IEEE KOJI KOBAYASHI COMPUTERS AND COMMUNICATIONS AWARD\*\*](#)—recognizes outstanding contributions to the integration of computers and communications—sponsored by *NEC Corporation*—to

**Recipient**

**VICTOR BAHL** (FIEEE)—Distinguished Scientist, Microsoft Research, Richmond, California, USA

**Citation**

"For contributions to broadband wireless systems."

17. [\*\*IEEE WILLIAM E. NEWELL POWER ELECTRONICS AWARD\*\*](#)—recognizes outstanding contribution(s) to the advancement of power electronics—sponsored by the *IEEE Power Electronics Society*—to

**Recipient**

**RAINER MARQUARDT** (non-member)—Professor for Power Electronics and Control, Universität der Bundeswehr München, Neubiberg, Germany

**Citation**

"For development of the modular multilevel converter application in medium drives and high-voltage DC transmission systems."

18. [\*\*IEEE DANIEL E. NOBLE AWARD FOR EMERGING TECHNOLOGIES\*\*](#)—recognizes outstanding contributions to emerging technologies recognized within recent years—sponsored by *Motorola Solutions Foundation*—to

### **Recipient**

**RAJIV V. JOSHI** (FIEEE)—Research Staff Member, IBM T. J. Watson Research Center, Yorktown Heights, New York, USA

### **Citation**

"For contributions to predictive failure analytics, VLSI memory design, and technology."

19. **IEEE DONALD O. PEDERSON AWARD IN SOLID-STATE CIRCUITS**—recognizes outstanding contributions to solid-state circuits—sponsored by the *IEEE Solid-State Circuits Society*—to

### **Co-Recipients**

**WILLIAM S. CARTER** (non-member)—Fellow, Xilinx, San Jose, California, USA

**AND**

**STEPHEN M. TRIMBERGER** (FIEEE)—Fellow, Xilinx, San Jose, California, USA

### **Citation**

"For contributions to field-programmable gate array technology."

20. **IEEE FREDERIK PHILIPS AWARD**—recognizes outstanding accomplishments in the management of research and development resulting in effective innovation in the electrical and electronics industry—sponsored by *Philips Electronics N.V.*—to

### **Recipient**

**IAN A. YOUNG** (LFIEEE)—Senior Fellow, Intel Corporation, Hillsboro, Oregon, USA

### **Citation**

"For leadership in research and development on circuits and processes for the evolution of microprocessors."

21. **IEEE PHOTONICS AWARD**—recognizes outstanding achievements in photonics—sponsored by the *IEEE Photonics Society*—to

### **Recipient\***

**URSULA KELLER** (FIEEE)—Professor, Physics Department, Institute for Quantum Electronics, Zurich, Switzerland

### **Citation**

"For seminal contributions to ultrafast laser technology enabling important industrial applications and novel scientific breakthroughs."

22. [\*\*IEEE ROBOTICS AND AUTOMATION AWARD\*\*](#)—recognizes outstanding contributions in the field of robotics and automation—sponsored by the *IEEE Robotics and Automation Society*—to

**Recipient**

**MATTHEW T. MASON** (FIEEE)—Professor, The Robotics Institute, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA

**Citation**

“For scientific and educational contributions to the mechanics of manipulation enabling real-world robot autonomy, and for leadership in robotics.”

23. [\*\*IEEE FRANK ROSENBLATT AWARD\*\*](#)—recognizes outstanding contributions to the advancement of the design, practice, techniques, or theory in biologically and linguistically motivated computational paradigms, including but not limited to neural networks, connectionist systems, evolutionary computation, fuzzy systems, and hybrid intelligent systems in which these paradigms are contained—sponsored by the *IEEE Computational Intelligence Society*—to

**Recipient**

**ENRIQUE RUSPINI** (LFIEEE)—Independent Consultant, Palo Alto, California, USA

**Citation**

“For fundamental contributions to the understanding of fuzzy logic concepts and their applications.”

24. [\*\*IEEE MARIE SKLODOWSKA-CURIE AWARD\*\*](#)—recognizes outstanding contributions to the field of nuclear and plasma sciences and engineering—sponsored by the *IEEE Nuclear and Plasma Sciences Society*—to

**Recipient**

**DAVID ROBERT NYGREN** (non-member)—Presidential Distinguished Professor, Department of Physics, University of Texas, Arlington, Texas, USA

**Citation**

“For pioneering radiation detector developments, enabling major discoveries in diverse areas of science.”

25. [\*\*IEEE INNOVATION IN SOCIETAL INFRASTRUCTURE AWARD\*\*](#)—recognizes significant technological achievements and contributions to the establishment, development, and proliferation of innovative societal infrastructure systems through the application of information technology with an emphasis on distributed computing systems—sponsored by *Hitachi, Ltd.* and the *IEEE Computer Society*—to

### **Co-recipients**

**DAVID F. FERRAILOLO** (non-member)—Senior Computer Scientist, National Institute of Standards and Technology, Gaithersburg, Maryland, USA

AND

**D. RICHARD KUHN** (SMIEEE)—Computer Scientist, National Institute of Standards and Technology, Gaithersburg, Maryland, USA

AND

**RAVI SANDHU** (FIEEE)—Professor of Computer Science and Lutcher Brown Chair in Cybersecurity, University of Texas at San Antonio, San Antonio, Texas, USA

### **Citation**

“For advancing the foundations and practice of information security through creation, development, and technology transfer of role-based access control (RBAC).”

26. **IEEE CHARLES PROTEUS STEINMETZ AWARD**—recognizes exceptional contributions to the development and/or advancement of standards in electrical and electronics engineering—sponsored by the *IEEE Standards Association*—to

### **Recipient**

**CRAIG M. WELLMAN** (LFIEEE)—Atlas Chemical Industries, Maintenance Engineer (Retired), Newark, Delaware, USA

### **Citation**

“For leadership in developing and promoting standards that enable arc hazard assessment and injury-risk mitigation.”

27. **IEEE ERIC E. SUMNER AWARD**—recognizes outstanding contributions to communications technology—sponsored by *Nokia Bell Labs*—to

### **Recipient**

**PETER W. SHOR** (MIEEE)—Morss Professor of Applied Mathematics, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA

### **Citation**

“For contributions to quantum communication and information theory.”

28. **IEEE NIKOLA TESLA AWARD**—recognizes outstanding contributions to the generation and utilization of electric power—sponsored by *Wolong Electric Group Co., Ltd.*, and the *IEEE Industry Applications Society* and the *IEEE Power & Energy Society*—to



**Recipient**

**LONGYA XU** (FIEEE)—Professor, The Ohio State University, Columbus, Ohio, USA

**Citation**

“For contributions to design and control of efficient electric machines for wind power generation and electrified vehicles.”

29. **IEEE KIYO TOMIYASU AWARD**—recognizes outstanding early to mid-career contributions to technologies holding the promise of innovative applications—sponsored by *Dr. Kiyoo Tomiyasu, the IEEE Geoscience and Remote Sensing Society*, and the *IEEE Microwave Theory and Techniques Society*—to

**Recipient**

**NICHOLAS LANEMAN** (FIEEE)—Professor, University of Notre Dame, Notre Dame, Indiana, USA

**Citation**

“For contributions to wireless network communication theory, algorithms, and architectures.”

30. **IEEE TRANSPORTATION TECHNOLOGIES AWARD**—recognizes advances in technologies within the fields of interest to the IEEE as applied in transportation systems—sponsored by the *IEEE Industry Applications Society, IEEE Industrial Electronics Society, IEEE Intelligent Transportation Systems Society, IEEE Microwave Theory and Techniques Society, IEEE Power Electronics Society, IEEE Power & Energy Society*, and *IEEE Vehicular Technology Society*—to

**Recipient**

**JAMES C.C. CHAN** (FIEEE)—Honorary Professor, University of Hong Kong, Pokfulam, Hong Kong

**Citation**

“For contributions to the advancement of electric vehicle technologies.”

31. **IEEE UNDERGRADUATE TEACHING AWARD**—recognizes inspirational teaching of undergraduate students in the fields of interest of the IEEE—sponsored by the *IEEE Education Society*—to

**Recipient**

**SUSAN M. LORD** (FIEEE)—Professor, University of San Diego, Department of Electrical Engineering, San Diego, California, USA

**Citation**

“For contributions to the development of more inclusive and innovative undergraduate teaching in electrical and computer engineering.”

32. **2017 IEEE ERIC HERZ OUTSTANDING STAFF MEMBER AWARD**—recognizes a present or past full-time staff member of the IEEE with at least ten years of service—sponsored by *IEEE*—to

**Recipient**

**MARY WARD-CALLAN** (SMIEEE)—Managing Director, IEEE Technical Activities, Piscataway, New Jersey, USA

**Citation**

“For leadership of and service to IEEE volunteers, and for commitment and care in IEEE Technical Activities for the benefit of IEEE.”