



2019 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

MATTHEW O'DONNELL (LFIEEE)—Professor and Dean Emeritus, Department of Bioengineering, University of Washington, Seattle, Washington, USA

Citation

“For leadership in biomedical ultrasonics and medical imaging technologies.”

2. **IEEE CLEDO BRUNETTI AWARD**—recognizes outstanding contributions to nanotechnology and technologies for microsystem miniaturization—sponsored by the *Brunetti Bequest*—to

Co-Recipients

DANIEL C. EDELSTEIN (SMIEEE)—IBM Fellow, IBM T.J. Watson Research Center, Yorktown Heights, New York, USA

AND

ALFRED GRILL (non-member)—IBM Fellow Emeritus, IBM T.J. Watson Research Center, Yorktown Heights, New York, USA

AND

C-K HU (non-member)—Research Staff Member, IBM T.J. Watson Research Center, Yorktown Heights, New York, USA

Citation

“For contributions to manufacturable, reliable, and scalable Cu interconnect and low-k dielectric technology for CMOS.”

3. **IEEE ELECTRONICS PACKAGING AWARD**—recognizes outstanding contributions to advancing components, electronic packaging, or manufacturing technologies—sponsored by the *IEEE Electronics Packaging Society*—to

Recipient

EPHRAIM SUHIR (LFIEEE)—Professor, Portland State University, Portland, Oregon, USA

Citation

“For seminal contributions to mechanical reliability engineering and modeling of electronic and photonic packages and systems.”

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

Recipient

PRAMOD P. KHARGONEKAR (FIEEE)—Vice Chancellor for Research and Distinguished Professor, University of California, Irvine, California, USA

Citation

“For contributions to robust and optimal control theory.”

5. **IEEE ELECTROMAGNETICS AWARD**—recognizes outstanding contributions to the theory and/or application of electromagnetics—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

RICHARD W. ZIOLKOWSKI (FIEEE)— Distinguished Professor, University of Technology Sydney, Ultimo, Australia

Citation

“For contributions to electromagnetic metamaterial-inspired physics and engineering, and localized wave phenomena.”

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

Recipient

HERMANN NEY (FIEEE)— Professor, RWTH Aachen University of Technology, Aachen, Germany

Citation

“For pioneering contributions to statistical and computational modeling for speech recognition and machine translation.”

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

ALAN CONRAD BOVIK (FIEEE)—Cockrell Family Regents Endowed Chair Professor, University of Texas at Austin, Austin, Texas, USA

Citation

“For seminal contributions and high-impact innovations to the theory and application of perception-based image and video processing.”

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

Recipient

DIGH HISAMOTO (FIEEE)—Chief Senior Scientist, Hitachi, Ltd., Tokyo, Japan

Citation

“For pioneering work in the manufacturing of three-dimensional double-gate MOSFET devices.”

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

STEVEN A. BOGGS (FIEEE)—President, Nonlinear Systems Inc., Ashford, Connecticut, USA

Citation

“For contributions to the improved component reliability in transmission and distribution systems.”

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

Co-Recipients

TOMONORI AOYAMA (LFIEEE)—Professor Emeritus, The University of Tokyo, Kamakura, Japan

AND

TAKASHI HAYASAKA (nonmember)—Corporate Officer, Business Consulting, Tokyo, Japan

Citation

“For pioneering contributions in super-high-definition image technologies leading to 4K digital cinema and television.”

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

JENNIFER REXFORD (FIEEE)—Professor, Princeton University, Princeton, New Jersey, USA

Citation

“For fundamental contributions to the programmability, stability, and performance of large computer networks, and leadership within the networking community.”

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

Recipient

SUSUMU TADAKUMA (LFIEEE)—Professor (Retired), Chiba Institute of Technology, Chiba, Japan

Citation

“For pioneering contributions to high-power converters and drives for high-speed-train and industrial applications.”

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

ALAN FINKEL (FIEEE)—Australia’s Chief Scientist, Commonwealth of Australia, Canberra City, Australia

Citation

“For contributions to high-speed, accurate measurement of electrical transmission in the brain and other biological cells.”

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

KENNETH MARTIN (LFIEEE)—President, Granite SemiCom Inc., Toronto, Canada

Citation

“For contributions to analog, mixed-signal, and digital integrated circuits, and outstanding leadership in microelectronics education and research and development.”

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

GREGORY W. WORNELL (FIEEE)—Sumitomo Professor of Engineering, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA

Citation

“For leadership in the mentoring of research students and in the development of graduate curricula that incorporate cutting-edge research perspectives.”

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

Recipient

R. SRIKANT (FIEEE)—Fredric G. and Elizabeth H. Nearing Endowed Professor, Department of Electrical and Computer Engineering and Coordinated Science Lab, University of Illinois, Urbana, Illinois, USA

Citation

“For contributions to congestion control and scheduling in computer communication networks.”

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

Recipient

PATRIZIO VINCIARELLI (non-member)—Chief Executive Officer, Vicor Corporation, Andover, Massachusetts, USA

Citation

"For visionary leadership in the development of high-efficiency, high-power-density power conversion components for distributed power system applications."

18. [**IEEE DANIEL E. NOBLE AWARD FOR EMERGING TECHNOLOGIES**](#)—recognizes outstanding contributions to emerging technologies recognized within recent years—sponsored by the *IEEE Daniel E. Noble Award Fund*—to

Recipient

THOMAS KENNY (SMIEEE)—Professor, Department of Mechanical Engineering, Stanford University, Stanford, California, USA

Citation

"For the development and widespread commercialization of MEMS resonators for timing applications."

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

Recipient

LAURENCE NAGEL (LFIEEE)—President, Omega Enterprises Consulting, Kensington, California, USA

Citation

"For the development and demonstration of SPICE as a tool to design and optimize electronic circuits."

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

ASAD M. MADNI (LFIEEE)—Distinguished Adjunct Professor/Distinguished Scientist, UCLA ECE Department, Faculty Fellow, Institute of Transportation Studies, University of California Los Angeles, California, USA

Citation

"For leadership in and pioneering contributions to the development and commercialization of sensors and systems for aerospace and automotive safety."

21. [**IEEE PHOTONICS AWARD**](#)—recognizes outstanding achievements in photonics—sponsored by the *IEEE Photonics Society*—to

Recipient

MICHAL LIPSON (FIEEE)—Eugene Higgins Professor Electrical Engineering, Columbia University, New York, New York, USA

Citation

“For pioneering contributions to silicon photonics.”

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

Co-Recipients

ZEXIANG LI (FIEEE)—Professor, Department of Electrical and Electronic Engineering, Hong Kong University of Science and Technology, Clearwater Bay, Hong Kong, China

AND

FRANK WANG (MIEEE)— Founder and Chief Executive Officer, SZ DJI Technology Co., Ltd., Shenzhen, China

Citation

“For contributions to the development and commercialization of civilian drones, aerial imaging technology, robotics engineering advancement, innovation, and entrepreneurship.”

23. [**IEEE FRANK ROSENBLATT AWARD**](#)—recognizes outstanding contributions to biologically and linguistically motivated computational paradigms and systems—sponsored by the *IEEE Computational Intelligence Society*—to

Recipient

ERKKI OJA (LFIEEE)—Emeritus Professor (Retired), Aalto University, Espoo, Finland

Citation

“For contributions to neural networks and unsupervised learning.”

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

SANJIV GAMBHIR (MIEEE)—Professor and Chairman, Department of Radiology, Stanford University, Stanford, California, USA

Citation

“For the development of nuclear and optical science in the field of molecular imaging and cancer treatment.”

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

ANDY VIDAN (SMIEEE)—CEO & Co-Founder, Composable Analytics, Inc., Cambridge, Massachusetts, USA

AND

PAUL BREIMYER (non-member)—Director of Software Engineering, Audible Inc., an Amazon Company, Cambridge, Massachusetts, USA

AND

GREGORY G. HOGAN (MIEEE)—Associate Group Leader; Advanced Sensors & Techniques, Massachusetts Institute of Technology Lincoln Laboratory, Lexington, Massachusetts, USA

Citation

“For development of real-time collaborative and distributed emergency response and recovery systems.”

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

INNOCENT KAMWA (FIEEE)—Chief Expert - Power Systems Simulation and Evolution, Hydro-Quebec Research Institute (IREQ), Varennes, Quebec, Canada

Citation

“For sustained leadership in the development of standards for electrical machines.”

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

Recipient

ANDREA GOLDSMITH (FIEEE)—Professor, Stanford University, Stanford, California, USA

Citation

"For contributions to the fundamental understanding and innovation in adaptive and multiple antenna techniques for wireless communication networks."

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

Recipient

TOMY SEBASTIAN (FIEEE)—Director; Motor Drive Systems, Halla Mechatronics, Bay City, Michigan, United States

Citation

"For contributions to the design and application of high-performance permanent magnet synchronous machines to electric power steering."

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

Co-Recipients

ROBERT W. HEATH, JR. (FIEEE)—Cullen Trust Endowed Professor #6, The University of Texas at Austin, Austin, Texas, USA

AND

JEFFREY ANDREWS (FIEEE)—Cullen Trust for Higher Education Endowed Professor of Engineering, The University of Texas at Austin, Austin, Texas, USA

Citation

"For contributions to wireless communication systems."

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

HAO HUANG (FIEEE)—Technology Chief, General Electric Aviation Electrical Power, Dayton, Ohio, USA

Citation

“For contributions to aircraft electrification.”

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

Recipient

LISA G. HUETTEL (SMIEEE)—Professor of the Practice, Department of Electrical and Computer Engineering, Duke University, Durham, North Carolina, USA

Citation

“For leadership in curriculum development as well as teaching and mentoring of undergraduate students in electrical and computer engineering.”

32. [**2018 IEEE ERIC HERZ OUTSTANDING STAFF MEMBER AWARD**](#)—recognizes sustained contributions by a present or past full-time staff member—sponsored by *IEEE*—to

Recipient

MICHAEL N. GESELOWITZ (SMIEEE)—Senior Director, IEEE History Center at Stevens Institute of Technology, Hoboken, New Jersey, USA

Citation

“For enhancing the values of the IEEE History Center and developing many initiatives promoting engineering and technology history.”