



2020 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, IEEE Engineering in Medicine and Biology Society and the IEEE Signal Processing Society*—to

Recipient

F. STUART FOSTER (FIEEE)—Senior Scientist and Professor, Sunnybrook Research Institute and Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

Citation

“For contributions to the field of high-resolution imaging.”

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

Co-recipients

JAMES H. STATHIS (FIEEE)— Principal Research Staff Member, IBM Research, Yorktown Heights, New York, USA

AND

ERNEST YUE WU (FIEEE)— Senior Technical Staff Member, IBM Research, Albany, New York, USA

Citation

“For contributions to the understanding of gate dielectric reliability and its application to transistor scaling.”

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

Co-Recipients

MITSUMASA KOYANAGI (LFIEEE)—Senior Research Fellow, Tohoku University, Sendai, Miyagi, Japan

AND

PETER RAMM (SMIEEE)— Head of Strategic Projects, Fraunhofer EMFT, Bavaria, Germany

Citation

"For pioneering contributions leading to the commercialization of 3D wafer and die level stacking packaging."

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

Recipient

ANDERS LINDQUIST (FIEEE)—Zhiyuan Chair Professor, Shanghai Jiao Tong University, Shanghai, China

Citation

"For contributions to optimal filtering, stochastic control, stochastic realization theory, and system identification."

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

TAPAN KUMAR SARKAR (LFIEEE)— Professor, Syracuse University, Syracuse, New York, USA

Citation

"For contributions to the efficient and accurate solution of computational electromagnetic problems in frequency and time domain, and for research in adaptive 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

HYNEK HERMANSKY (FIEEE)— Julian S. Smith Professor and Director, John Hopkins University, Baltimore, Maryland, USA

Citation

"For contributions to speech processing and feature extraction for robust speech recognition."

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

ALFRED O. HERO, III (FIEEE)—John H. Holland Distinguished University Professor, University of Michigan, Ann Arbor, Michigan, USA

Citation

“For contributions to the foundations of statistical signal processing with applications to distributed sensing and performance benchmarking.”

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

Recipient

EVELYN L. HU (FIEEE)—Tarr-Coyne Professor of Applied Physics and Electrical Engineering, John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, Massachusetts, USA

Citation

“For pioneering contributions to microelectronics fabrication technologies for nanoscale and photonic 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

DUSAN POVH (LFIEEE)—Private Consulting, Power Systems HVDC and FACTS, Bavaria, Germany

Citation

“For contributions to the development and applications of HVDC and FACTS.”

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

Recipient

EBEN UPTON (nonmember)—CEO, Raspberry Pi, Cambridge, Cambridgeshire, United Kingdom

Citation

“For creating an inexpensive single-board computer and surrounding ecosystem for education and consumer applications.”

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

CO-Recipients

STEPHEN L. CASNER (nonmember)—Retired Packet Design Fellow, Sunnyvale, California, USA

AND

EVE M. SCHOOLER (MIEEE)—Principal Engineer and Director of Emerging IoT Networks, Intel, Santa Clara, California, USA

Citation

“For distinguished leadership in developing standards for Internet multimedia, and formative contributions to the design of Internet multimedia protocols.”

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

Recipient

KOUKI MATSUSE (LFIEEE)—Emeritus Professor, Meiji University, Tama, Tokyo Japan

Citation

“For pioneering contributions to the advancement of sensorless vector control of AC drives and multilevel inverters for industrial applications.”

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

Recipient

DARIO PETRI (FIEEE)—Full Professor, Department of Industrial Engineering, University of Trento, Trento, Italy

Citation

“For contributions to measurement fundamentals and signal processing techniques in instrumentation and measurement.”

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

MARTIN HASLER (LFIEEE)—Honorary Professor, Ecole Polytechnique Federale de Lausanne, Vaud, Switzerland

Citation

“For fundamental contributions to nonlinear circuit theory and nonlinear dynamics.”

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

SHU LIN (LFIEEE)—Adjunct Professor, Department of Electrical and Computer Engineering, University of California at Davis, California, USA

Citation

“For transforming graduate education in the fields of coding theory, information theory, and digital communications.”

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

Recipient

BALAJI PRABHAKAR (FIEEE)—VMware Founders Professor of Computer Science, Professor of Electrical Engineering and Computer Science and Graduate School of Business, Stanford University, Stanford, California, USA

Citation

“For contributions to the theory and practice of network algorithms and protocols, in particular Internet routers, data centers, and self-programming networks.”

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

IVO BARBI (LFIEEE)—Emeritus Professor, Federal University of Santa Catarina, Florianopolis, Brazil

Citation

“For contributions to soft-switching converter technologies and power electronics education.”

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

MIRO MICOVIC (FIEEE)—Engineering Fellow, Raytheon, Tucson, Arizona, USA

Citation

“For leadership in millimeter-wave Gallium Nitride (GaN) transistor and technology development.”

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

KLAAS BULT (FIEEE)—Professor, Delft University of Technology – Fac. EEMCS, Delft, Zuid Holland, the Netherlands

Citation

“For leadership in embedded analog and mixed-signal integrated 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 *Royal Philips*—to

Recipient

KAZUO YANO (FIEEE)— Fellow, Hitachi, Ltd., Tokyo, Japan

Citation

“For leadership in the development and materialization of human-centric IoT technology in the electronics industry.”

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

Recipient

CHRISTOPHER RICHARD DOERR (FIEEE)—AVP Advanced Development, Acacia Communications, Holmdel, New Jersey, USA

Citation

“For sustained pioneering research, development, and commercialization of photonic integrated circuits and devices for telecommunications.”

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

VIJAY KUMAR (FIEEE)— Nemirovsky Family Dean, School of Engineering and Applied Science, University of Pennsylvania, Philadelphia, Pennsylvania, USA

Citation

“For contributions to cooperative robotics; networked mobile manipulation systems, particularly unmanned aerial vehicles; and leadership in robotics research, policy, and education.”

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

XIN YAO (FIEEE)—Chair Professor of Computer Science, Southern University of Science and Technology, Shenzhen, China

Citation

“For contributions to the advancement of the theory and applications of computational intelligence.”

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

MICHAEL A. LIEBERMAN (FIEEE)— Professor of the Graduate School, University of California, Berkeley, California, USA

Citation

“For groundbreaking research and sustained intellectual leadership in the physics of low-temperature plasmas and their application.”

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

Recipient

MASARU KITSUREGAWA (FIEEE)—Director General and Professor, National Institute of Informatics, Tokyo, Japan

Citation

“For contributions to big data collection and analytics of real-world problems with advanced data engineering technologies.”

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

SOLVEIG WARD (FEEE)—Executive Advisor, Quanta Technology, Raleigh, North Carolina, USA

Citation

“For leadership in and contributions to protection and communication standards for improved power system reliability.”

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

Recipient

THEODORE S. RAPPAPORT (FIEEE)—David Lee/Ernst Weber Professor of Electrical Engineering, New York University, New York, USA

Citation

“For pioneering contributions to radio channel modeling and characterization, and millimeter wave communication systems.”

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

AKIRA CHIBA (FIEEE)—Professor, Tokyo Institute of Technology, Tokyo, Japan

Citation

"For contributions to bearingless and reluctance motors."

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

Recipient

ANDREA ALÙ (FIEEE)—Einstein Professor, Founding Director, CUNY Advanced Science Research Center, New York, New York, USA

Citation

"For contributions to novel electromagnetic materials and their application."

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

MARKOS PAPAGEORGIOU (LFIEEE)— Professor, Technical University of Crete, Chania, Greece

Citation

"For contributions to traffic flow modelling and operations."

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

RAJESH KANNAN MEGALINGAM (SMIEEE)—Director, HuT Labs, Amrita Vishwa Vidyapeetham University, Kollam, India

Citation

"For his exemplary role in encouraging undergraduate engineering students to take up research for developing innovative solutions for the society."

32. **[2019 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

JONATHAN DAHL (AMIEEE)—Lead Director, Professional Education & Services, Educational Activities, Piscataway, New Jersey, USA

Citation

“For leadership in and contributions toward the extraordinary growth in the awareness and reach of the IEEE’s electronic libraries.”