



2013 IEEE TFA Recipients and Citations

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

ROBERT PLONSEY (LFIEEE)—Professor Emeritus of Biomedical Engineering at the Pratt School of Engineering, Duke University, Durham, NC, USA

“For developing quantitative methods to characterize the electromagnetic fields in excitable tissue, leading to a better understanding of the electrophysiology of nerve, muscle, and brain.”

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

GIORGIO BACCARANI (LFIEEE)—Professor, University of Bologna, Bologna, Italy

“For contributions to scaling theory and modeling of metal oxide semiconductor (MOS) devices.”

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 Components, Packaging and Manufacturing Technology Society*—to

JOHN H. LAU (FIEEE)—ITRI Fellow, Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan

“For contributions to the literature in advanced solder materials, manufacturing for highly reliable electronic products, and education in advanced packaging.”

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

STEPHEN P. BOYD (FIEEE)—Samsung Professor of Electrical Engineering, Stanford University, CA, USA

“For contributions to systems design and analysis via convex optimization.”

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 Microwave Theory and Techniques Society*, and *IEEE Geoscience and Remote Sensing Society*—to

LEUNG TSANG (FIEEE)—Professor of Electrical Engineering, University of Washington, Seattle, WA, USA

“For contributions to statistical electromagnetic theory and applications in remote sensing of complex geophysical environments.”

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

VICTOR ZUE (MIEEE)—Delta Electronics Professor of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, USA

“For pioneering contributions to acoustic phonetics and conversational spoken-language systems.”

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

SHINICHI TAKAGI (MIEEE)—professor in the department of Electrical Engineering and Information Systems, School of Engineering, The University of Tokyo, Tokyo, Japan

“For contributions to the understanding of transport properties in inversion layers of high-performance MOSFETs.”

8. **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

VIJAY VITTAL (FIEEE)—Ira A. Fulton Chair Professor, Arizona State University, Tempe, AZ, USA

“For development of power system stability assessment methods leading to the maximum utilization and increased reliability of transmission facilities.”

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

MARTIN DIETZ (Non-member)—CEO, Innosupport AG, Nüremberg, Germany

AND

KRISTOFER KJÖRLING (Non-member)—Principal Member Technical Staff, Dolby Laboratories, Stockholm, Sweden

AND

LARS LILJERYD (Non-member)—Principal Member Technical Staff and Senior Advisor Research, Dolby Laboratories, Stockholm, Sweden

“For pioneering innovations in digital audio coding, technology leadership, and contributions to the development of High-Efficiency AAC (‘HE-AAC’).”

10. **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

DAVID L. MILLS (FIEEE)—Adjunct Professor, University of Delaware, Newark, DE, USA

“For significant leadership and sustained contributions in the research, development, standardization, and deployment of quality time synchronization capabilities for the Internet.”

11. **IEEE REYNOLD B. JOHNSON INFORMATION STORAGE SYSTEMS AWARD**—for outstanding contributions to information storage systems with emphasis on computer storage systems—sponsored by *Hitachi Data Systems*—to

MICHAEL L. KAZAR (Non-member)—Chief Technology Officer, Avere Systems, Pittsburgh, PA, USA

“For developments in networked global file systems and clustered data storage that shaped commercial networked file access and the emergence of cloud storage.”

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

KAUSHIK RAJASHEKARA (FIEEE)—Chief Technologist, Electric Power and Control Systems, Rolls-Royce Corporation, Indianapolis, IN, USA

“For contributions to the advancement of electrical systems in transportation for higher efficiency and lower emissions.”

13. **IEEE JOSEPH F. KEITHLEY AWARD IN INSTRUMENTATION AND MEASUREMENT**—recognizes outstanding contributions in electrical measurements—sponsored by *Keithley Instruments, Inc.*—to

DYLAN FORREST WILLIAMS (FIEEE)—Electrical Engineer, National Institute of Standards and Technology (NIST), Boulder, CO, USA

“For the development of traceable mismatch-corrected microwave-scattering parameters and temporal waveform calibration and measurement.”

14. **IEEE GUSTAV ROBERT KIRCHHOFF AWARD**—recognizes outstanding contributions 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

SANJIT K. MITRA (LFIEEE)—Stephen and Etta Varra Professor Emeritus/Research Professor, Department of Electrical Engineering, University of Southern California, Los Angeles, CA, USA

“For fundamental contributions to filter design and signal processing.”

15. **IEEE KOJI KOBAYASHI COMPUTERS AND COMMUNICATIONS AWARD**—recognizes outstanding contributions to the integration of computers and communications—sponsored by NEC Corporation—to

THOMAS ANDERSON (Non-member)—Robert E. Dinning Professor of Computer Science & Engineering, University of Washington, Seattle, WA, USA

“For contributions to understanding and improving the performance, reliability, and security of the Internet.”

16. **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

RIK W. DE DONCKER (FIEEE)—Professor Dr. ir. and Head of Institute for Power Electronics and Electrical Drives, RWTH Aachen University, Aachen, Germany, and director of E. ON Energy Research Center, RWTH Aachen University, Honorary Doctor and Professor at Faculty for Electrical Engineering and Information Technology at Technical University Riga, Latvia

“For contributions to the development of new components, topologies, and controls in power electronic systems.”

17. **IEEE DANIEL E. NOBLE AWARD FOR EMERGING TECHNOLOGIES**—recognizes outstanding contributions to emerging technologies recognized within recent years—sponsored by *Motorola Foundation*—to

JAN P. ALLEBACH (FIEEE)—Hewlett-Packard Distinguished Professor of Electrical and Computer Engineering, Purdue University, West Lafayette, IN, USA

“For the development of the Tone-Dependent Error Diffusion algorithm used widely in inkjet and laser printers.”

18. **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

ANANTHA P. CHANDRAKASAN (FIEEE)—Joseph F. and Nancy P. Keithley Professor, Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, USA

“For pioneering techniques in low-power digital and analog CMOS design.”

19. **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 NV*—to

WILLIAM M. HOLT (Non-member)—Senior Vice President and General Manager, Technology and Manufacturing Group, Intel Corporation, Hillsboro, OR, USA

“For leadership in the development and high-volume manufacturing of leading-edge logic technologies.”

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

PETER FRANKLIN MOULTON (FIEEE)—Vice-President, CTO, Q-Peak, Inc.,
Bedford, MA, USA

“For the discovery of the Ti:Sapphire laser and the development of many novel solid-state laser systems and applications.”

21. **IEEE ROBOTICS AND AUTOMATION AWARD**—recognizes outstanding contributions in the field of robotics and automation—sponsored by the *IEEE Robotics and Automation Society*—to

RUZENA BAJCSY (FIEEE)—NEC Chair Professor, Department of Electrical Engineering and Computer Sciences, University of California, Berkeley, CA, USA

“For contributions to computer vision, the active perception paradigm, and medical robotics.”

22. **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

TERRENCE SEJNOWSKI (FIEEE)—Francis Crick Chair, The Salk Institute, Salk Institute for Biological Studies, La Jolla, CA, USA

“For contributions to computational neuroscience.”

23. **IEEE DAVID SARNOFF AWARD**—recognizes exceptional contributions to electronics—sponsored by *SRI International Sarnoff*—to

SAJEEV JOHN (MIEEE)—University Professor, Department of Physics, University of Toronto, Toronto, Ontario, Canada

“For the conception and development of light-trapping crystals and for leadership in elucidating their properties and applications in photonics.”

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

VELJKO RADEKA (LFIEEE)—Division Head, Senior Scientist, Brookhaven National Laboratory, Upton, NY, USA

“For the development of new radiation detectors, electronics, and systems that operate at the fundamental limits of performance, enabling discoveries in many areas of science.”

25. **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

MOHINDAR S. SACHDEV (LFIEEE)—Professor Emeritus, Department of E&C E, University of Saskatchewan, Saskatchewan, Canada

“For contributions to and leadership in the development of guides, recommended practices, and standards for power system protection.”

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

VAHID TAROKH (FIEEE)—Professor, School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, USA

AND

HAMID JAFARKHANI (FIEEE)—Chancellor’s Professor, University of California, Irvine, CA, USA

AND

SIAVASH ALAMOUTI (MIEEE)—Group R&D Director, Vodafone, Vodafone House, Newbury, Great Britain

“For contributions to block signaling for multiple antennas.”

27. **IEEE NIKOLA TESLA AWARD**—recognizes outstanding contributions to the generation and utilization of electric power—sponsored by *The Grainger Foundation* and the *IEEE Power & Energy Society*—to

NORIO TAKAHASHI (FIEEE)—Professor, Department of Electrical and Electronic Engineering, Okayama University, Okayama, Japan

“For contributions to finite element modeling, analysis, and optimal design tools of electrical machines.”

28. **IEEE KIYO TOMIYASU AWARD**—recognizes outstanding early to mid-career contributions to technologies holding the promise of innovative applications—sponsored by Dr. Kiyō Tomiyasu, the *IEEE Geoscience & Remote Sensing*

Society, IEEE Microwave Theory and Techniques Society, and KDDI R&D Laboratories, Inc.—to

CARLOS A. COELLO COELLO (FIEEE)—Professor (Investigador Cinvestav 3F) and Chair of the Computer Science Department of the Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional in Mexico City, México

“For pioneering contributions to single- and multiobjective optimization techniques using bioinspired metaheuristics.”

29. **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

HIDENORI AKIYAMA (FIEEE)—Professor, Kumamoto University, Kumamoto, Japan

“For excellence in graduate teaching, curriculum development, inspirational research guidance, and development of widely used textbooks in pulsed power.”

30. **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

CHARLES K. ALEXANDER (LFIEEE)—Professor, Electrical and Computer Engineering, Cleveland State University, Cleveland, OH, USA

“For contributions to the development and enhancement of undergraduate students’ engineering skills necessary for successful careers.”

31. **IEEE Donald G. Fink Award**—for the most outstanding survey, review, or tutorial paper published in the IEEE Transactions, Journals, Magazines, or in the Proceedings of the IEEE between 1 January and 31 December of the preceding year—sponsored by the IEEE Life Members Committee

STEFANO GALLI

ANNA SCAGLIONE

ZHIFANG WANG

For their paper entitled “For the Grid and Through the Grid: The Role of Power Line Communications in the Smart Grid,” *Proceedings of the IEEE*, Vol. 99, No. 6, June 2011, pp. 998–1027.

32. **IEEE W.R. G. Baker Prize Paper Award**—for the most outstanding paper reporting original work published in any IEEE archival publications (such as

Transactions, Journals, and Letters), Magazines, or Proceedings—sponsored by IEEE Circuits and Systems, IEEE Communications, IEEE Control Systems, IEEE Information Theory, IEEE Power & Energy, IEEE Signal Processing, and IEEE Vehicular Technology Societies

Erdal Arıkan

For his paper entitled “Channel Polarization: A Method for Constructing Capacity-Achieving Codes for Symmetric Binary-Input Memoryless Channels,” *IEEE Transactions on Information Theory*, Vol. 5, Issue 7, July 2009, pp. 3051–3073