2014 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 Engineering in Medicine and Biology Society, IEEE Circuits and Systems Society,* and *IEEE Computational Intelligence Society*—to

LIHONG WANG (FIEEE)—Gene K. Beare Distinguished Professor, Washington University, St. Louis, MO, USA

"For pioneering photoacoustic tomography."

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

MARTIN A. VAN DEN BRINK (Nonmember)—Vice President, ASML, Veldhoven, Netherlands

"For designing new lithography tool concepts and bringing these to the market, enabling micrometer to nanometer imaging."

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

AVRAM BAR-COHEN (FIEEE)—Distinguished University Professor of Mechanical Engineering, University of Maryland, College Park, Maryland, USA

"For contributions through leadership, education, and advocacy to thermal design, modeling, and analysis of electronic components, and for original research on heat transfer and liquid-phase cooling."

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

TAMER BAŞAR (FIEEE)—Swunlund Endowed Chair and CAS Professor of Electrical and Computer Engineering University of Illinois, Urbana-Champaign, Urbana, Illinois, USA

"For seminal contributions to dynamic games, stochastic and risk-sensitive control, control of networks, and hierarchical decision making."

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

ALLEN TAFLOVE (FIEEE)—Professor, Electrical Engineering and Computer Science, Northwestern University, Evanston, Illinois, USA

"For contributions to the development and application of finite-difference time-domain (FDTD) solutions of Maxwell's equations across the electromagnetic spectrum."

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

BIING HWANG JUANG (FIEEE)—Motorola Foundation Chair Professor and GRA Eminent Scholar, Georgia Institute of Technology, Atlanta, Georgia, USA

"For pioneering contributions to automatic speech recognition and speech coding."

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

SANJAY KUMAR BANERJEE (FIEEE)—Cockrell Regents Chair Professor of Electrical and Computer Engineering and Director, Microelectronics Center, University of Texas, Austin, Texas, USA

"For contributions to column-IV MOSFETs and related materials processing."

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

WILLEM BOONE (MIEEE)—Senior Consultant, KEMA, Oosterbeek, The Netherlands

"For successful international leadership and guidance in understanding critical factors affecting power cable life and in improving diagnostic test procedures."

9. **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

JON CROWCROFT (FIEEE)—Professor, University of Cambridge, Cambridge, United Kingdom

"For contributions to research in and teaching of Internet protocols, including multicast, transport, quality of service, security, mobility, and opportunistic networking."

10. **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

JOHN K. OUSTERHOUT (Affiliate, IEEE)—Professor, Stanford University, Stanford, California, USA

AND

MENDEL ROSENBLUM (MIEEE)—Professor, Stanford University, Stanford, California, USA

"For fundamental contributions to the design and implementation of log-structured file and storage systems."

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

ROBERT D. LORENZ (FIEEE)—Professor of Mechanical Engineering, University of Wisconsin—Madison, Madison, Wisconsin, USA

"For contributions to the development of methodologies and sensors for precision control of electric motor drives and coordinated drive systems."

12. **IEEE JOSEPH F. KEITHLEY AWARD IN INSTRUMENTATION AND MEASUREMENT**—recognizes outstanding contributions in electrical measurements—sponsored by *Keithley Instruments, Inc. and Instrumentation & Measurement Society*—to

THOMAS E. LINNENBRINK (FIEEE)—Manager, Teqovations, LLC, Colorado Springs, Colorado, USA

"For pioneering charge-mode analog-to-digital converters and for developing IEEE-standard converter terminology and test methods."

13. **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

C.L. LIU (FIEEE)—Professor, Computer Science Department, National Tsing Hua University, Hsinchu, Taiwan

"For seminal, long-lasting contributions to design automation for circuits and systems."

14. **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

JOHN M. CIOFFI (FIEEE)—Hitachi America Professor of Engineering (Emeritus), Stanford University, Packard Electrical Engineering Building, Stanford, CA, USA

"For educating a stellar array of graduate students in digital communications and for inspiring them to make a difference."

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

GEORGE VARGHESE (MIEEE)**—**Principal Researcher, Microsoft Research, Mountain View, CA, USA

"For contributions to the field of network algorithmics and its applications to high-speed packet networks."

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

FREDE BLAABJERG (FIEEE)—Professor, Aalborg University, Department of Energy Technology, Aalborg, Denmark

"For contributions to power electronics in renewable energy and adjustable speed drives."

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

GABRIEL M. REBEIZ (FIEEE)—Professor, University of California, San Diego, La Jolla, CA, USA

"For pioneering contributions enabling commercialization of RF MEMS technology and tunable micro- and millimeter-wave systems."

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

ROBERT G. MEYER (LFIEEE)**—**Professor Emeritus and Professor in the Graduate School, Department of Electrical Engineering and Computer Sciences, University of California, Berkeley, CA, USA

"For pioneering contributions to the design and modeling of analog and radio-frequency circuits."

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

HENRY T. NICHOLAS, III (MIEEE)—Retired, Newport, CA, USA

"For exemplary leadership and entrepreneurial vision in the commercialization of communications semiconductors that enable ubiquitous broadband connectivity."

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

JAMES G. FUJIMOTO (FIEEE)—Elihu Thomson Professor of Electrical Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA

"For pioneering the development and commercialization of optical coherence tomography for medical diagnostics."

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

SHIGEO HIROSE (FIEEE)—CTO, HiBot Corporation, Tokyo, Japan

"For contributions to the design and construction of multiple nonconventional robotic systems such as snakelike, quadruped walking, wall climbing, and swarm robots."

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

GEOFFREY E. HINTON (Nonmember)—University Professor, University of Toronto, Department of Computer Science, Toronto, ON, Canada

"For contributions to neural networks and deep learning."

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

LARRY A. COLDREN (LFIEEE)—Fred Kavli Professor of Optoelectronics and Sensors, University of California at Santa Barbara, Santa Barbara, California, USA

"For contributions to semiconductor lasers and photonic integrated circuits."

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

MALCOLM H. HUDSON (Nonmember)—Emeritus Professor, Department of Statistics, Macquarie University, Australia

AND

BRIAN F. HUTTON (SMIEEE)—Professor, Chair of Medical Physics in Nuclear Medicine and Molecular Imaging Science, Institute of Nuclear Medicine, Division of Medicine, University College London, London, United Kingdom

AND

LAWRENCE A. SHEPP (Nonmember)—Patrick T. Harker Professor of Statistics, Wharton School of the University of Pennsylvania and Department of Statistics, Rutgers University, Piscataway, New Jersey, USA

"For developing maximum-likelihood image reconstruction in emission tomography leading to its widespread and effective use in healthcare."

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 *IEEE Computer Society*—to

BALAJI PRABHAKAR (FIEEE)—Professor, Stanford University, Stanford, CA, USA

"For his demonstration of the innovative use of information technology and distributed computing systems to solve long-standing societal problems, in areas ranging from transportation to healthcare and recycling."

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

MARK MCGRANAGHAN (FIEEE)—Vice President, Power Delivery & Utilization, Electric Power Research Institute, Knoxville, TN, USA

"For sustained leadership in IEEE standards and global harmonization of standards including power quality, system monitoring, transients and harmonics, smart grid interoperability, and applications."

27. **IEEE ERIC E. SUMNER AWARD**—recognizes outstanding contributions to communications technology—sponsored by *Bell Labs, Alcatel-Lucent* —to

ALAN ELI WILLNER (FIEEE)—Steven & Kathryn Sample Chaired Professor in Engineering, University of Southern California, Los Angeles, CA, USA

"For contributions to high-capacity, multiplexed, optical communication systems."

28. **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

HAMID A. TOLIYAT (FIEEE)**—**Professor and Director of Electric Power & Electronics Program, Texas A&M University, College Station, TX, USA

"For contributions to the design, analysis, and control of fault-tolerant multiphase electric machines."

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

GEORGE CHRISIKOS (FIEEE)**—**Principal Engineer, Qualcomm Inc., San Diego, CA, USA

"For contributions to heterogeneous network architectures with ubiquitous wireless access."

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

LINOS J. JACOVIDES (FIEEE)—Director, Delphi Research Labs (Retired), Grosse Pointe Farms, MI, USA

"For pioneering contributions to the analysis and design of electromechanical systems and power electronics for transportation applications."

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

HSI-TSENG CHOU (FIEEE)—Professor, Department of Communications Engineering, Yuan Ze University, Chung-Li, Taiwan

"For inspirational teaching and innovations in undergraduate engineering education."

32. **IEEE W.R. G. BAKER 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*, to three co-recipients:

STEPHEN J. WRIGHT (MIEEE)—University of Wisconsin, Madison, Wisconsin, USA

ROBERT D. NOWAK (FIEEE)—University of Wisconsin, Madison, Wisconsin, USA

MÁRIO A. T. FIGUEIREDO (FIEEE)—Instituto de Telecomunicações, Instituto Superior Técnico, Torre Norte, Lisboa, Portugal

For their paper titled, "Sparse Reconstruction by Separable Approximation," *IEEE Transactions on Signal Processing*, Vol. 57, Issue 7, July 2009, pp. 2479–2493.

33. **IEEE DONALD G. FINK PRIZE PAPER AWARD**, for the outstanding survey, review, or tutorial paper in any of the IEEE Transactions, Journals, Magazines, or Proceedings, sponsored by the *IEEE Life Members Fund*—to two co-recipients:

DIPANKAR RAYCHAUDHURI (FIEEE)—WINLAB, Tech Centre of NJ, North Brunswick, New Jersey, USA

NARAYAN B. MANDAYAM (FIEEE)—WINLAB, Tech Centre of NJ, North Brunswick, New Jersey, USA

For their paper titled, "Frontiers of Wireless and Mobile Communications," *Proceedings of the IEEE*, Vol. 100, Issue 10, April 2012, pp. 824–840.

34. **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

FRAN ZAPPULLA (MIEEE)—Senior Director, Publishing Operations, IEEE, Piscataway, New Jersey, USA

Citation

"For outstanding leadership in the success of IEEE publications."