IEEE Fellows Elevated as of January 2023

Nominee Details	Active Societies	Evaluating Society/ Council
Michael Braasch ***for contributions to GPS multipath error characterization and mitigation***	AES	AES
Karen Haigh ***for contributions to closed-loop control of embedded systems***	AES	AES
Anthony Martone ***for contributions to the development and validation of cognitive radar systems***	AES AP	AES
Khanh Pham ***for leadership in military aerospace decision support systems and strategic small business innovation***		AES
Francesco Andriulli ***for contributions to computational electromagnetics***	AP MTT EMB EMC	AP
Mauro Ettorre ***for contributions to large antenna arrays based on quasi-optical beam formers***	AP MTT	AP
Wonbin Hong ***for contributions to millimeter-wave mobile and base station antennas***	AP MTT SEN COM	AP

Ahmad Hoorfar ***for contributions to sensing and imaging in stratified media and optimization in electromagnetics***	GRS MTT AP	AP
Oscar Quevedo-teruel ***for contributions to glide symmetry based metasurfaces and lens antennas***	SEN NANO CEDA AP MTT	AP
Paolo Rocca ***for contributions to clustered and time-modulated antenna arrays***	AP	AP
Jack Schuss ***for leadership in the development of antennas for satellite communications and radars***	AP MTT	AP
Kin Tong ***for contributions to wideband and circularly polarized printed antenna designs***	AP	AP
Giovanni Toso ***for contributions to multibeam antenna developments for satellite applications***	AP	AP
Gabriel Miro Muntean ***for contributions in multimedia quality in heterogeneous network environments***	COM BT	BT
Gail-joon Ahn ***for development of applications of information and systems security***	C	C
Jason Anderson ***for contributions to high-level synthesis and low-power FPGAs***		C

Vijayalakshmi Atluri ***for contributions to security and privacy for data and workflow systems***	C	C
Mark Billinghurst ***for contributions to augmented and virtual reality***	C	C
Srdjan Capkun ***for contributions to wireless and systems security***	C	C
Yuan-hao Chang ***for contributions to non-volatile memory reliability***	C CEDA	C
Yixin Chen ***for contributions to advancing the compactness and applicability of deep learning systems***	C	C
Guihai Chen ***for contributions to large-scale distributed network architecture***	COM C	C
Haibo Chen ***for contributions to the design and implementation of distributed operating systems***	C	C
Hao Chen ***for contributions to the security of software and mobile systems***		C
Shing Cheung ***for contributions to testing methodologies and bug management for software***	C	C
Frederic Chong ***for contributions to the field of quantum computer architecture, compilation and optimization***	C	C

Andre Dehon ***for contributions to reconfigurable computing and FPGAs***	C	C
Wei Ding ***for contributions to data mining and Big Data research in scientific domains***		C
Wenliang Du ***for contributions to cybersecurity education and research***	C	C
Juan Gilbert ***for leadership in broadening participation in computing and contributions to accessible voting technologies***	SIT SMC C	C
Amar Gupta ***for contributions to banking transactions and healthcare practice***	C	C
Chen He ***for contributions to test of automotive microcontrollers and microprocessors***	C CEDA	C
Derek Hoiem ***for contributions to computer vision***		C
Shuiwang Ji ***for contributions to machine learning and data mining***		C
Zhi Jin ***for significant contributions to knowledge-driven software development***	RL SMC C	C
James Joshi ***for contributions to access control and privacy***	C	C

Shin-ichi Kawamura ***for contributions to cost-effective and secure cryptography***	C	C
Carl Kesselman ***for foundational contributions to technologies and applications of global distributed computing***	C	C
Tadayoshi Kohno ***for contributions to cybersecurity***	C	C
Guoliang Li ***for contributions to human-in-the-loop data management and database systems***		C
Jia Li ***for leadership in large-scale AI***	CAS C	C
Chen Li ***for contributions to supporting similarity queries in databases and data-intensive computing***		C
Haibin Ling ***for contributions to computer vision for visual tracking and matching***	C	C
Ce Liu ***for contributions to computer vision and computational photography***		C
Xiaoming Liu ***for contributions to facial image analysis and recognition***	BIO	C
Rajit Manohar ***for contributions to the design and implementation of asynchronous circuits and systems***	CAS C	C

Tamara Munzner ***for contributions to principles, processes, and design for visualization***	C	C
Suman Nath ***for contributions to the dynamic analysis framework for mobile and cloud systems***		C
Srinivasan Parthasarathy ***for contributions to high performance data mining and network analysis***		C
Hanspeter Pfister ***for contributions to computer vision applications***	C	C
Vir Phoha ***for development of attack-averse active authentication using behavioral patterns***	C	C
Moinuddin Qureshi ***for contributions to scalable memory systems***	C	C
Eunice Santos ***for leadership in computational social networks***	BIO CIS SMC SYS EMB C	C
Ankur Srivastava ***for contributions to chip hardware security***		C
Zhendong Su ***for contributions to automated software testing and analysis***		C
Wei Wang ***for contributions to data mining***	C	C

Jue Wang ***for contributions to quality of image and video matting processing***		C
Jianping Wang ***for contributions to resiliency of complex systems***	COM C	C
Tilman Wolf ***for contributions to design of network processors and in-network processing services***	COM	C
Yongwei Wu ***for contributions to high-performance data storage and data-intensive computing systems***	C	C
Xiaokui Xiao ***for contributions to database privacy and graph data management***	C	C
Jingling Xue ***for contributions to compiler optimization and program analysis***	C	C
Danfeng Yao ***for contributions to enterprise data security and high-precision vulnerability screening***	C	C
Xingquan Zhu ***for contributions to data mining for big data analytics and network representation learning***	SMC C	C
Jun Zhu ***for contributions to machine learning and its applications***		C
Chengqing Zong ***for contributions to machine translation and natural language processing***	CIS C SP	C

Muhammad Khellah ***for contributions to co-optimization of on-die dense memory and fine-grain power-management circuits***	SSC	CAS
Chang-su Kim ***for contributions to video communications and visual processing***	CAS	CAS
Zhengguo Li ***for contributions to video encoding and streaming optimization and edge-preserving filters***	IE SP	CAS
Linda Milor ***for contributions to testing of analog circuits and bridging the design-manufacturing gap for integrated circuits***	CAS	CAS
Pavlos Sotiriadis ***for contributions to advanced frequency synthesis and high-speed data buses***	CAS	CAS
Dmitri Strukov ***for contributions to neuromorphic and alternative computing systems based on emerging memory devices***	ED CAS	CAS
Xiaoyu Wang ***for contributions to video analysis technologies for embedded systems***	CAS SP	CAS
Yao Zhao ***for contributions to image/video analysis and multimedia content protection***	CAS SMC COM SP	CAS
Yike Guo ***for contributions to data mining and its applications***	CIS	CIS

Wei Liu ***for contributions to large-scale machine learning and multimedia intelligence***	CAS SP CIS C SMC	CIS
Lixin Tang ***for contributions to computational intelligence and applications in manufacturing***	CIS SMC	CIS
Ke Tang ***for contributions to scalable evolutionary algorithms for large-scale optimization***	CIS C	CIS
Hong Wang ***for contributions to learning control and diagnosis for complex dynamical systems***	CS CIS RA ITSS NANO SYS	CIS
Kemal Akkaya ***for contributions to routing and topology management in wireless ad hoc and sensor networks***	COM C	COM
Joao Barros ***for contributions to physical-layer security and vehicular networking***	COM IT	COM
Ertugrul Basar ***for contributions to physical-layer design for next-generation wireless networks***		COM
Maite Brandt-pearce ***for contributions to optical wireless and fiber communications***	COM PHO	COM
Symeon Chatzinotas ***for contributions to precoding technologies for multiple antennas***	SP COM VT	COM

Julian Cheng ***for contributions to mathematical modeling of wireless systems and energy-efficient resource management of wireless networks***	COM IT VT	COM
Harpreet Dhillon ***for contributions to heterogeneous cellular networks***	COM SP VT ITSS	COM
Roberto Di Pietro ***for contributions to the security of distributed systems***	COM	COM
Guangjie Han ***for contributions to Internet of Underwater Things and Industrial Internet of Things***	COM IE SEN SYS	COM
Muhammad Imran ***for contributions to energy efficient and self-organized wireless systems***	BIO RFID SEN SYS COM AP	COM
Uma Jha ***for advancements in multi-standard and multi-function wireless communication system design***	COM VT	COM
Marios Kountouris ***for contributions to optimization and multi-antenna techniques in heterogeneous wireless networks***	COM SP SYS IT	COM
Bhaskar Krishnamachari ***for contributions to algorithms and protocols for wireless networks***	COM	COM
Minglu Li ***for contributions to wireless sensor and vehicular networks***	COM C	COM

Michail Matthaiou ***for contributions to fundamental research and practical implementation of massive MIMO***	COM SP	COM
Ralf Reiner Mueller ***for contributions to the design and analysis of large multiantenna and multiple-access systems***	COM SP IT	COM
Tze Sing Eugene Ng ***for contributions to circuit-switched innovations in datacenter network and scalable methods for Internet delay estimation***		COM
Hideki Ochiai ***for contributions to power and spectral efficient wireless communication***	VT COM IT SP	COM
Ye Ouyang ***for leadership in network intelligence and self-organizing cellular networks***	COM C	COM
Houbing Song ***for contributions to big data analytics and integration of AI with Internet of Things***	SP COM C SYS SEN RFID VT ITSS IE	COM
Thomas Stockhammer ***for contributions to media delivery and video streaming standards***	BT	COM
Olav Tirkkonen ***for contributions in the theory and practice of wireless communications technology and standards***	IT VT COM SP	COM

Massimo Tornatore ***for contributions to machine-learning and optimization algorithms for resource management in optical networks***	COM	COM
Piet Van Mieghem ***for contributions to network modeling and quality of service based routing***		COM
Qian Wang ***for contributions to secure cloud data storage and wireless system security***	COM	COM
Kun Yang ***for contributions to resource management in wireless networks***	COM VT	COM
Shui Yu ***for contributions to cyber security and privacy***	SP COM C VT SEN SYS	COM
Quan Yu ***for technical leadership in radio and space-air-ground integrated network technologies***	VT COM	COM
Haijun Zhang ***for contributions to radio-resource management in heterogeneous networks***	COM VT	COM
Yongxing Zhou ***for contributions to MIMO Beamforming codebooks and smart spectrum access in wireless networks***	COM VT SP	COM
Xiangyun Zhou ***for contributions to physical layer security and wireless powered communications***	COM	COM

Gang Zhou ***for contributions to sensor networks and low-power wireless networks***	COM C	COM
Haojin Zhu ***for contributions to Vehicular Networks and Internet-of-Things Security***	COM VT	COM
Zuqing Zhu ***for contributions to elastic optical networking and network virtualization***	COM PHO	COM
Carolyn Beck ***for contributions to model reduction and to the analysis of epidemic processes over networks***	CS	CS
Hong Chen ***for contributions to predictive control and applications in automotive systems***	RA IE CS SMC VT ITSS	CS
Dimos Dimarogonas ***for contributions to distributed and hybrid control of multi-agent systems***	RA CS	CS
Kingsley Fregene ***for contributions to the autonomous control of unmanned vehicles***	RA CS	CS
Javad Lavaei ***for contributions to nonlinear optimization in power systems***	PE CS	CS
Henrik Sandberg ***for contributions to model reduction and secure control systems***	CS	CS

Ling Shi ***for contributions to cyber-physical system optimization and security***	CS	CS
Ying Tan ***for contributions to rehabilitation robotics***		CS
Abdelhamid Tayebi ***for contributions to the control of unmanned aerial vehicles and learning-based control for robot manipulators***	CS RA	CS
Jong-moon Chung ***for contributions in consumer wireless communications and networking systems technology***	CT PSE COM VT	CT
Zenichiro Hara ***for contribution to Large-Scale Color Display systems and practical realization***	CT	CT
Howard Sedding ***for contributions to practical partial discharge testing of electrical equipment***	DEI PE	DEI
Kyung Cheol Choi ***for contributions to emissive, flexible, and wearable displays***	ED	ED
Tetsuo Endoh ***for contributions to nonvolatile memory and spintronic logic***	CAS SSC ED	ED
Harald Gossner ***for contributions to ESD design of advanced IC devices and high speed systems***	ED	ED
Masataka Higashiwaki ***for contributions to gallium oxide electronics and millimeter-wave gallium nitride transistors***	ED	ED

Atsushi Hori ***for contributions to the development and manufacture of low-power CMOS for digital consumer appliances***		ED
Guann-pyng Li ***for contributions to the bipolar device, circuit and technology in silicon and compound semiconductors***	ED	ED
Thomas Mikolajick ***for contributions to nonvolatile memory***	UFFC SSC ED	ED
Munaf Rahimo ***for contributions to high-voltage insulated gate bipolar transistors for grid applications***	PEL ED IA	ED
Sei-hyung Ryu ***for contributions to silicon carbide power device technology***	ED	ED
Abu Sebastian ***for contributions to in-memory computing for scientific applications***	CAS ED	ED
Pierre Verlinden ***for leadership in high performance silicon solar cell and photovoltaics technology and commercialization***	ED PE	ED
Sufi Zafar ***for contributions to CMOS compatible biosensors and high permittivity field effect transistor reliability models***		ED
Shekhar Bhansali ***for contributions to portable realtime sensing devices for continuous monitoring***	EMB SEN NANO ED	EMB

Gari D. Clifford ***for contributions to machine learning applications in cardiovascular time series***		EMB
Ayman El-baz ***for contributions to artificial intelligence in medicine***	SP EMB	EMB
Robert Frisina ***for distinguished contributions in neuroengineering and auditory sciences, especially age-related hearing loss causes and treatments***	SEN NANO BIO EMB	EMB
Richard Heller ***for contributions to medical engineering for therapeutic applications***	EMB	EMB
He Huang ***for contributions in control development in rehabilitation robotics***	RA EMB	EMB
Zong-ming Li ***for contributions to carpal tunnel biomechanics and neuromuscular hand motor control***		EMB
Douglas Noll ***for contributions to functional magnetic resonance imaging of the brain***	EMB	EMB
John Pauly ***for contributions to data acquisition and image reconstruction methods for magnetic resonance imaging***	SP	EMB
Rajesh Rao ***for contributions to brain-computer interfaces and computational modeling***		EMB

Krishna Shenoy ***for contributions to cortical control of movement and brain-computer interfaces***	EMB	EMB
Yihong Qi ***for contributions to over-the-air testing of massive MIMO systems and development of over-the-air measurement systems***	SEN VT AP COM IM EMC	EMC
Andrew Tay ***for contributions to hygro-thermo-mechanical failure prevention of semiconductor packaging***	EP	EP
James Garrison ***for contributions to Earth remote sensing using signals of opportunity***	GRS OE AES	GRS
Jonathan Li ***for contribution to point cloud analytics in LiDAR remote sensing***	GRS ITSS	GRS
Gabriele Moser ***for contributions to pattern recognition in remote sensing***	GRS	GRS
Ping Yang ***for seminal contributions to radiative transfer, and remote sensing of ice clouds and dust aerosols***	GRS	GRS
Bilal Akin ***for contributions to control, diagnosis and condition monitoring of AC drives***	IE PEL IA VT PE	IA
Marko Hinkkanen ***for contributions to sensorless control of industrial motor drives***	PEL IA IE	IA

Chengxiong Mao ***for leadership in active control of power systems and its industrial applications***	PEL IA PE IE	IA
Kashem Muttaqi ***for contribution to modeling and control of renewable and distributed energy resources***	IA PE CSC SYS IE PEL	IA
Masaaki Okubo ***for contributions to non-thermal plasma applications for pollution control***	IA	IA
Jean-luc Schanen ***for contribution to Electromagnetic Compatibility in Power Electronics***	EMC PEL IA	IA
Yilmaz Sozer ***for contributions to the design and control of electric machine drives***	IA PEL SEN IE	IA
Mingzhou Xu ***for contributions to power systems of all-electric aircraft***	IA	IA
Concettina Buccella ***for contributions to the modeling of electric systems and the modulation of multilevel converters***	IE	IE
Fei Gao ***for contributions to real-time simulation and control techniques for fuel cells and power converters***	IA PEL PE IE	IE
Zhiwei Gao ***for contributions to real-time diagnosis and control of wind turbine systems***	IE CS SMC PE	IE

Hoay Gooi ***for contributions to energy storage in microgrids***	PE IE	IE
Lei Guo ***for contributions to composite anti-disturbance control systems***	SMC CS IE CIS	IE
Juan Rodriguez-andina ***for contributions to embedded systems in industrial electronics***	IE	IE
Dmitri Vinnikov ***for contributions to impedance-source converter design***	PEL IE	IE
Jun Yang ***for contributions to disturbance observer-based control***	CS IE	IE
Shen Yin ***for contributions to fault diagnosis and fault-tolerant control of complex systems***	IE SMC RL CIS	IE
Youmin Zhang ***for contributions to fault diagnosis and fault-tolerant control systems***	IE CS RA CIS SMC AES ITSS VT	IE
Chenghui Zhang ***for contributions to control of renewable energy systems***	PEL CS IA IE	IE

Zhigang Liu ***for contributions to fault detection and protection in high-speed railway power systems***	IA PE IM VT PEL IE CIS ITSS	IM
Lijun Xu ***for contributions to multiphase flow measurement and combustion process monitoring***	GRS SEN IM	IM
Constantine Caramanis ***for contributions to robust statistics and optimization in high dimensions***	IT COM SP	IT
Natasha Devroye ***for fundamental contributions to the theoretical understanding of cognitive, two-way, and relay networks***	IT	IT
Mohammad Maddah-ali ***for contributions to information theory for interference management, coded caching and computing***	IT	IT
Changho Suh ***for contributions to interference management and distributed storage codes***	IT SP COM	IT
Mark Wilde ***for contributions to the relative-entropy framework and theorems for quantum communications***	IT	IT
Alexandre Bayen ***for contributions to distributed parameter systems control, with applications to mobile sensing and automotive systems***	CS	ITSS

Yinhai Wang ***for contributions to traffic sensing, transportation data science, and smart infrastructure systems***	ITSS	ITSS
Geoffrey Beach ***for contributions to the understanding of magnetoelectric effects, domain wall and skyrmion dynamics in nanostructures***	MAG	MAG
Julie Grollier ***for contributions to the use of spintronic devices for neuromorphic computing***		MAG
Mathias Klaui ***for his contribution to the next generation magnetic solid-state memory, logic and sensor devices***	MAG	MAG
Laura Lewis ***for contributions to the design of magneto-functional materials***	MAG	MAG
Daniel Worledge ***for contributions to magneto-resistive random access memories***	MAG	MAG
Jaleel Akhtar ***for contributions in microwave planar sensors and nano-composites-based microwave absorbers***	MTT AP EMC SEN	MTT
Walid Ali-ahmad ***for leadership in development of low-cost direct-conversion cellular RF systems***	MTT SSC AP	MTT
Roberto Gomez-garcia ***for contributions to planar multi-function microwave filters***	CAS SSC MTT	MTT

Shilong Pan ***for contributions to high-performance microwave-photonic imaging radar***	IM SEN SYS MTT PHO	MTT
Smail Tedjini ***for contributions to the development of harmonic backscattering RFID systems and chipless tag solutions***	EP COM AP MTT	MTT
Miguel Urteaga ***for contributions to terahertz heterojunction bipolar transistor integrated circuit technology***	ED	MTT
Hua Wang ***for contributions to high-efficiency microwave and millimeter-wave power amplifiers***	CAS ED SSC EMB MTT AP	MTT
Margaret Daube-witherspoon ***for Contributions to 3D Image Reconstruction in PET and Corrections for Physics Effects***	NPS	NPS
Richard Lanza ***for developing novel imagers and radiation detectors applied to medicine and security problems***	EMB PE NPS	NPS
Uri Shumlak ***for research of sheared flow stabilization of the Z pinch for fusion energy***	NPS	NPS
Vesna Sossi ***for contributions to quantitative and translational brain PET imaging***	NPS	NPS
Peter Gerstoft ***for contributions to environmental signal processing and geo-acoustic array processing***	SP OE	OE

James Preisig ***for contributions to underwater acoustic communication channel modeling, signal processing and performance prediction***	SP OE	OE
Nima Amjady ***for contributions to uncertainty modeling and forecasting for power systems***		PE
Hassan Bevrani ***for contributions to microgrid control***	PEL PE CS	PE
Zhaohong Bie ***for contributions to power system reliability and resilience***	PE	PE
Yonghong Chen ***for contributions in wholesale electricity market design and operations***	PE	PE
Paul Denholm ***for contributions to energy storage in renewable-energy systems***	PE	PE
Alejandro Dominguez-garcia ***for contributions to distributed control and uncertainty analysis of electrical energy systems***	PE CS	PE
David Hart ***for contribution to the development of the smart grid***	PE	PE
Bernard Lesieutre ***for contributions to electric power system dynamic modeling, simulation and power engineering education***	CAS PE	PE
Pierluigi Mancarella ***for contribution to power system resilience and multi-energy systems***	PE	PE

Michael Negnevitsky ***for contributions to application of AI techniques for control of isolated hybrid power systems***	PE	PE
Christian Rehtanz ***for contributions to wide area monitoring, protection and control systems for electrical power grids***	PE	PE
Toshiaki Rokunohe ***for contributions to eco-friendly compact and reliable high-voltage equipment***	PE	PE
Tomonobu Senjyu ***for contributions to wind-power generator automation and control***	PEL PE IE	PE
Wanxing Sheng ***for contributions to safe operation and coordinated control of smart power distribution systems***	PE	PE
Konstantin Staschus ***for the institutionalization of Europe-wide joint transmission grid planning***	PE	PE
Stefan Tenbohlen ***for contributions to leadership in power transformer reliability***	PE DEI EMC	PE
Subramanian Vadari ***for leadership in electric power system planning and markets***	PE	PE
Eiichi Zaima ***for leadership in ultra-high voltage transmission technology and international standards***	PE	PE
Stanley Atcitty ***for leadership in advancing power conversion systems for grid energy storage applications***	PEL	PEL

Ali Davoudi ***for contributions to power-electronic dominant microgrid control***	PEL IA PE IE	PEL
Yong Kang ***for contributions to digital control of inverters and renewable power conversion systems***	PEL IE	PEL
Ashraf Lotfi ***for pioneer contributions in developing and commercializing high-density 3-dimensional integrated power electronics modules***	PEL	PEL
Marta Molinas ***for contributions to modeling and stability of power electronics***	PEL PE EMB	PEL
Xiongfei Wang ***for contributions to power-electronic-based power systems***	PEL IA IE PE	PEL
Raymond Beausoleil ***for contributions to classical and quantum communication and computation***	COM PHO C	PHO
Pavel Cheben ***for contributions to silicon and metamaterial photonics***	PHO	PHO
Michael Eismann ***for extraordinary technical leadership of hyperspectral remote sensing and infrared technology research for defense applications***	PHO SEN	PHO
Fabrizio Forghieri ***for contributions to optical communications systems***	PHO	PHO
Magnus Karlsson ***for fundamental contributions to the study of nonlinear fiber propagation and advanced modulation formats***	PHO	PHO

Keisuke Kojima ***for application of AI technologies to optimize the design of active and passive photonic devices***	PHO	PHO
Christina Lim ***for contributions in hybrid fiber-wireless communications technology***	COM MTT PHO	PHO
Andrew Lord ***for contributions to optical networking***	COM	PHO
Takashi Matsuoka ***for contributions to laser diodes for optical communications and nitride semiconductors for light emitting devices***	ED	PHO
Richard Mirin ***for contributions to quantum photonic devices***	PHO	PHO
Yoshiaki Nakano ***for contributions to semiconductor integrated photonic devices and circuits***	PHO EP ED	PHO
Boon Ooi ***for contributions to broadband light emitters and visible light communications***	ED PHO MTT	PHO
Anna Peacock ***for contributions to nonlinear fiber optics and materials***	PHO	PHO
Gabriel Popescu ***for contributions to phase imaging in biomedical applications***		PHO
Laurent Schmalen ***for contributions to the design of error correction and modulation techniques for optical networks***	IT COM PHO	PHO

Ping Shum ***for pioneering contributions in optical fiber-based technologies and their diverse applications***	COM SEN PHO SYS RFID CEDA NANO	PHO
Zbigniew Wasilewski ***for contributions to molecular beam epitaxy growth technology and photonic devices***		PHO
Aaron Dollar ***for contributions to dexterous grasping and manipulation***	RA EMB	RA
Dario Floreano ***for contributions to bio-inspired drone development and evolutionary robotics***		RA
Antonio Franchi ***for contributions to modelling, design, and control for aerial and distributed robotic systems***	RA CS	RA
Kensuke Harada ***for contributions to whole-body manipulation for biped humanoid robots***	RA	RA
Alois Knoll ***for contributions to Human-Robot Interaction and Neurorobotics***	RA SMC IE	RA
Jana Kosecka ***for contributions to robust embodied vision systems and semantic modelling in robotics***	RA	RA
Torsten Kroeger ***for contributions to real-time motion planning***	RA	RA

Cecilia Laschi ***for contributions to soft robotics***	RA EMB	RA
Karon Maclean ***for contributions to the design of haptic communication***	RA	RA
Arianna Menciassi ***for contributions to the development of robots for minimally invasive surgery***	RA EMB	RA
Kazuhiro Nakadai ***for contributions to robot audition and computational auditory scene analysis***	RA SP	RA
Christian Ott ***for contributions to torque-control theory using passive joint elasticity and the whole-body control of humanoids***	RA	RA
José Santos-victor ***for contributions to biologically-inspired cognitive vision and humanoid robotic systems***	RA	RA
Birgit Vogel-heuser ***for contributions to evolvable, adaptable field-level automation architectures for manufacturing systems and logistics***	E RA SMC IE CS C	RA
Li Zhang ***for contributions to micro-/nanorobot swarms and platforms for translational biomedicine***	RA NANO EMB	RA
Yuming Zhang ***for contributions to robotized welding manufacturing through machine-vision-based intelligence***	RA	RA

John Evans ***for contributions to electronics parts and assemblies for space systems***	RL EP	RL
James Michael ***for contributions to the protection of critical infrastructure***	RL C	RL
Mohammad Modarres ***for contributions to probabilistic risk assessment in nuclear safety***	RL	RL
Zibin Zheng ***for contributions to blockchain reliability engineering***	VT RL COM	RL
Daoyi Dong ***for contributions to quantum systems control and reinforcement learning***	CIS SMC CS RA	SMC
Bin Hu ***for contributions to pervasive affective computing***	SMC C	SMC
David Kaber ***for modeling and analysis of human-automation interaction and human-machine interface design in complex systems***	SMC	SMC
Dongrui Wu ***for contributions to fuzzy logic and its applications to controls and decision-making***	CIS SMC C	SMC
Farhan Baqai ***for contributions in leadership in digital camera image processing***	SP	SP
Alfred Bruckstein ***for contributions to signal representation and swarm robotics***	SP RA	SP

Carlos Busso ***for contributions to speech and multimodal affective signal processing and their technology applications***	C ITSS SP	SP
Patrizio Campisi ***for contributions to the development of biometrics***	SP	SP
Tsung-hui Chang ***for contributions to distributed optimization methods and their applications in signal processing and wireless communications***	SP COM	SP
Yuejie Chi ***for contributions to statistical signal processing with low-dimensional structures***	SP IT	SP
Gerald Matz ***for contributions to signal processing for communications in nonstationary environments***	IT COM SP	SP
Florian Metze ***for contributions to end-to-end training of speech recognition systems***	SP	SP
Chunyan Miao ***for contributions to multimodal signal processing and AI technologies for aging-at-home and population health***	SP E	SP
Chandra Murthy ***for contributions to Bayesian sparse signal recovery and energy harvesting communications***	COM IT SP	SP
Premkumar Natarajan ***for contributions to conversational AI systems, spoken language translation, and home voice-assistant systems***	SP C	SP

Michael Polley ***for leadership in multimedia chipset architectures and mobile camera technologies***	SP	SP
Daniel Povey ***for contributions to acoustic modeling for speech recognition***	SP	SP
Miguel Raul Rodrigues ***for contributions to multimodal data processing and foundations of reliable and secure communications***	COM C IT SP	SP
Gonzalo Seco-granados ***for contributions to signal processing for global navigation satellite systems, and 5G localization systems***	AES VT SP	SP
Anthony So ***for contributions to optimization in signal processing and communications***	SP IT	SP
Shinji Watanabe ***for contributions to speech recognition technology***	SP	SP
Stefan Werner ***for contributions to in-band full-duplex wireless communication systems and selective data-reuse online learning***	COM SP	SP
Jason Williams ***for contributions to the theory and practice of machine-learning-based spoken dialog systems***	SP	SP
Brendt Wohlberg ***for contributions to computational imaging and sparse representations***	SP	SP
Keith Bowman ***for contributions to variation-tolerant adaptive processor designs***	SSC	SSC

Donhee Ham ***for contributions to semiconductor electronic interfaces with biological systems***	SSC	SSC
Kenichi Okada ***for contributions to millimeter-wave communication circuits design***	ED MTT SSC	SSC
Woogeun Rhee ***for contributions to phase-locked circuits and systems***	CAS SSC	SSC
Sriram Vangal ***for contributions to network-on-chip architectures***	SSC	SSC
Marian Verhelst ***for contributions to energy-efficient near-sensor processing and embedded Machine Learning Processors***	CAS SSC	SSC
Chris De Korte ***for the development of translation of intravascular elastography for ultrasound imaging***	UFFC	UFFC
Marvin Doyley ***for research of ultrasound elastography using inverse methods***	EMB UFFC	UFFC
Omer Oralkan ***for contributions to micromachined ultrasonic transducers and integrated microsystems development, for imaging, therapy, and sensing***	SEN NANO EMB SSC UFFC	UFFC
Robert Tjoelker ***for contributions advancing trapped ion microwave clocks and deep-space frequency and timing systems***		UFFC

Keith Wear ***for applying acoustic pressure measurements to improve the safety and effectiveness of medical ultrasound***	EMB UFFC	UFFC
Jinho Choi ***for contributions to multiple access signal processing systems***	VT COM IT	VT
Song Ci ***for contributions to reconfigurable electric vehicle batteries***	PE VT SMC CIS COM	VT
Hai Jiang ***for contributions to cognitive radio networking and wireless performance analysis***	COM VT	VT
Jianping Pan ***for contributions to topology control of wireless networks***	VT COM	VT
Xin Wang ***for outstanding contributions to wireless localization and dynamic resource allocation in broadband mobile networks***	SP VT COM	VT
Kaishun Wu ***for contributions to wireless sensing and ubiquitous computing***	COM	VT
Shucheng Yu ***for contributions to information and network security***	COM VT	VT
Dr Stephanie Schuckers ***for contributions in biometric recognition systems***	BIO EMB SP	BIO
Norman Chang ***for leadership in the physical-level sign-off of Electronic Design Automation for SoC/ 3DIC***		CEDA

Ryan Kastner ***for contributions to the design and security of reconfigurable systems***		CEDA
Sung Kyu Lim ***for contributions to electronic design automation and tradeoff for 3-dimensional integrated circuits***	CEDA	CEDA
Sherief Reda ***for contributions to energy-efficient and approximate computing***	CAS C CEDA	CEDA
Fung Yu Young ***for contributions to electronic design automation in VLSI physical design***	CEDA CAS	CEDA
Zhiru Zhang ***for contributions to field-programmable gate array high-level synthesis and accelerator design***	CEDA	CEDA
Britton Plourde ***for contributions to integration of qubits into future practical quantum computing systems***	CSC	CSC
Ali Javey ***for contributions to 1D and 2D semiconductor transistors and wearable biochemical sensors***	ED	NANO
Xiaoning Jiang ***for contributions to ultrasound transducers for advanced sensing, imaging, and therapy***	NANO UFFC	NANO
Andras Kis ***for contributions to the development of 2D materials and electronic devices***	ED PHO	NANO

Qiangfei Xia ***for contributions to resistive memory arrays and devices for in-memory computing***	ED SSC NANO	NANO
Paul C.-p. Chao ***for contributions to optical bio-imaging and sensing technologies***	SEN IE IM CAS PHO CS	SEN
Radislav Potyrailo ***for contributions to sensor technologies for gas differentiation, interference rejection, and drift elimination***	SEN	SEN
Richard Syms ***for contributions to mass spectrometers based on microelectromechanical system technology***	PHO ED	SEN
Amir Aghdam ***for research leadership in distributed control of large-scale interconnected systems***	CS SYS	SYS