CELEBRATING EXCELLENCE

IEEE Power & Energy Society Awards 2021
Sustainable development requires human ingenuity. People are the most important resource.”

—DAN SHECHTMAN
Power & Energy Society
Awards and Recognition

Many of our recipients have donated their honoraria to the
IEEE PES Endowment Fund,
IEEE PES Scholarship Plus Fund,
or one of our many other funds solicited and stewarded by the IEEE Foundation

We Offer Our Profound Gratitude to These Award Recipients for Their Generosity and Support

IEEE Foundation

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PES Awards & Recognition

Alfredo Vaccaro, PES Awards & Recognition Chair
Julio Romero Aguero, PES V. P. of Membership and Image
Frank Lambert, PES President
Shanon Nason, PES Awards Staff

Award Committee Chairs

IEEE PES CSEE Yu-Hsin Ku Electrical Engineering Award

Chris Brooks
IEEE PES IAS A. P. Seethapathy Rural Electrification Excellence Award

John McDaniel
IEEE PES Award for Excellence in Power Distribution Engineering

Nicholas Miller
IEEE PES Charles Concordia Power System Engineering Award

Oleg Wasynczuk
IEEE PES Cyril Veinott Electromechanical Energy Conversion Award

Mohammad Shahidehpour
IEEE PES Douglas M. Staszesky Distribution Automation Award

Veronika Rabl
IEEE Power & Energy Society Leadership in Power Award

Hugh Rudnick
IEEE Power & Energy Society Lifetime Achievement Award

John McDonald
IEEE PES Meritorious Service Award

Rambabu Adapa
IEEE PES Nari Hingorani Custom Power Award

Jingxuan (Joanne) Hu
IEEE PES Nari Hingorani FACTS Award

Antonio Conejo
IEEE PES Outstanding Power Engineering Educator Award

Joydeep Mitra
IEEE PES Outstanding Young Engineer Award

Peter W. Sauer
IEEE PES Prabha S. Kundur Power System Dynamics and Control Award

Robert M. Pellegrino
IEEE PES Robert Noberini Distinguished Contributions to Power Engineering Professionalism Award

Armando M. Leite da Silva
IEEE PES Roy Billinton Power System Reliability Award

J. Charlie Smith
IEEE Power & Energy Society Ramakumar Family Renewable Energy Excellence Award

Abhay Kumar
IEEE PES Uno Lamm High Voltage Direct Current Award

Ruomie Li
IEEE PES Wanda Reder Pioneer in Power Award

Maria Teresa Correia de Barros
Fellows Chair

Jeffrey Nelson
IEEE PES Technical Committee and Technical Council Awards

Paul Pabst
IEEE PES Chapter Awards

Jaime Cepeda
PES Awards & Recognition Vice Chair
PES Awards Program

IEEE TECHNICAL FIELD AWARDS

♦ IEEE Charles Proteus Steinmetz Award
  Haran Karmaker
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♦ IEEE Herman Halperin Electric Transmission and Distribution Award
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♦ IEEE Richard Harold Kaufmann Award
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IEEE PES JOINT AWARDS

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  pp. 16 & 17

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  Bulent Sarlioglu
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  Ambrish Chandra
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PES Awards Program

- IEEE Power & Energy Society Ramakumar Family Renewable Energy Excellence Award
  
  Mukesh Nagpal

- IEEE PES Roy Billinton Power System Reliability Award
  
  Chongqing Kang

- IEEE PES Uno Lamm High Voltage Direct Current Award
  
  Hans Bjorklund

- IEEE PES Wanda Reder Pioneer in Power Award
  
  Marianela Herrera Guerrero

- IEEE Power & Energy Society Outstanding Student Scholarship
  
  Luis Felipe Gaitan Cubides, Isabelle Vitória Medeiros dos Santos, Juan Fernando Garcia Mathey, Colton Pankhurst, and Yufeng Xiong

- IEEE PES Prize Paper Awards
  
  “Full-Power Test of HVDC Circuit-Breakers with AC Short-Circuit Generators Operated at Low Power Frequency”
  
  Authored by: Nadew Adisu Belda, Cornelis Arie Plet, and Rene Peter Paul Smeets

  “Optimizing DER Participation in Inertial and Primary-Frequency Response”
  
  Authored by: Swaroop S. Guggilam, Changhong Zhao, Emiliano Dall’Anese, Christine Chen and Sairaj V. Dhople

- IEEE PES Working Group Recognition Award
  
  Outstanding Standard or Guide
  
  IEEE 1679, Recommended Practice for the Characterization and Evaluation of Energy Storage Technologies in Stationary Applications
  
  IEEE PES Energy Storage and Stationary Battery Committee
  
  WG Chair: Jim McDowall  WG Vice-Chair: Mike Nispel
  
  (32 Working Group Members)

  Outstanding Technical Report
  
  PES-TR64, Impact of Alternate Gases on Existing IEEE Standards
  
  IEEE PES Switchgear Committee
  
  WG Chair: Nenad Uzelac (24 Working Group Members)
PES Awards Program

♦ IEEE PES Outstanding Chapter Awards  pp. 54 - 56
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    Chapter Chair: Surekha Deshmukh
  ♦ Large Chapter - Malaysia Chapter
    Chapter Chair: Hazlie Bin Mokhlis
♦ Class of 2021 IEEE Fellows Pictures  pp. 58 & 59

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Peer Recognition: Do you know someone deserving recognition?

www.ieee-pes.org/pes-communities/awards

On-Line Nominations will be accepted starting in September

PES Awards Staff: Shanon Nason
s.nason@ieee.org
The IEEE Charles Proteus Steinmetz Award was established by the Board of Directors in 1979. This award was established to recognize individuals for exceptional contributions to the development and/or advancement of standards in electrical and electronics engineering.

In the evaluation process, the following criteria are considered: engineering and administrative accomplishment and responsibilities, publications (e.g. books, standards, papers, conference), honors, supporting letters, IEEE Activities, other organizations, and the quality of the nomination.

Recipient selection is administered through the Technical Field Awards Council of the IEEE Awards Board.

The award consists of a bronze medal, cash prize, and a certificate.

**Supporter:** IEEE Standards Association

**Current Committee Members:**
*Based on available information*

- Annette D. Reilly (Chair)
- Pamela Kumar (Past Chair)
- Osama Aboul-Magd
- Gary Hoffman
- John Kulick
- Rebekka Porath
- Adrian Stephens

**Past Recipients:**
*Complete listing is available on website*

- 2014 Mark McGranaghan
- 2015 Steven Mills
- 2016 Hermann Koch
- 2017 David John Law
- 2018 Craig M. Wellman
- 2019 Andrea J. Goldsmith
- 2020 Theodore S. Rappaport
Haran Karmaker has driven the development of internationally accepted standards that are considered invaluable to the advancement of state-of-the-art electrical machines. Specifically, the IEEE 1812-2014 standard on testing permanent magnet machines developed under his leadership that is used to validate the performance of permanent magnet electrical machines. Here, Karmaker validated a test method to separate the friction and windage losses from core losses by designing, manufacturing, and testing a large permanent magnet wind turbine generator. Next, IEEE 115-2019 – which is used for testing wound rotor synchronous machines – was revised under his leadership and addresses losses in large synchronous machines to improve their energy efficiency. And IEEE 112-2017, for which he included a test method for large induction machines using superposition principles to test in the factory where facilities for loading large machines are not available.

An IEEE Life Fellow, Karmaker is a principal R&D engineer with TECO Westinghouse Motor Company, Round Rock, TX, USA.
The IEEE Herman Halperin Electric Transmission and Distribution Award was established in 1986 through an agreement between Herman Halperin and the Board of Directors of the IEEE. Associated funding was contributed by Herman and Edna Halperin and is administered by the IEEE Foundation, Inc.

From 1959 through 1986, the award for outstanding contributions to the field of electric transmission and distribution was named the William M. Habirshaw Award. Herman Halperin was a recipient of the Habirshaw Award in 1962. Halperin had a distinguished career with the Commonwealth Edison Company over a period of 40 years. Subsequently, he spent 15 years as a consulting engineer. Over the course of his career, he was particularly noted for his pioneering contributions to the design and operation of electric plant facilities and power cable systems.

In the evaluation process, the following criteria are considered: technological importance, successful application, originality, leadership, publications, and the quality of the nomination.

This award recognizes outstanding contributions to electric transmission and distribution. The award consists of a bronze medal, cash prize, and certificate.

**Supporters:** Robert and Ruth Halperin Foundation, in memory of the late Herman and Edna Halperin, and IEEE Power & Energy Society

**Current Committee Members:**

Based on available information

- Jovica Milanovic (Chair)
- Maria Teresa Correia de Barros
- Mariesa Crow
- Innocent Kamwa
- Hugh Rudnick
- Lakshminarayana Satish
- Vijay Vittal

**Past Recipients:**

Complete listing is available on website

- 2014    Willem Boone
- 2015    Wolfram Boeck
- 2016    George Anders
- 2017    George Dorwart
- 2018    Jinliang He
- 2019    Steven A. Boggs
- 2020    Dusan Povh
IEEE Herman Halperin Electric Transmission and Distribution Award

BRIAN STOTT
2021 Recipient

For contributions to the development and application of power flow and optimal power flow analysis

BRIAN STOTT’S pioneering contributions to software applications used in the planning, analysis, and operation of electric power systems have contributed to the safe and reliable use of transmission networks. His “fast decoupled” power flow algorithm became the most widely used power industry computer application in the world. It is embedded in essential power-system monitoring and control applications such as contingency analysis, optimal power flow, dispatcher training simulators, and market applications. He pioneered the development of security-constrained optimal power flow (SCOPF) using quasilinear-programming techniques. These SCOPF methods, and the associated software originally developed in the company that he co-founded in 1984, are also in wide application. They are used for network-constrained economic dispatch, voltage optimization, and financial transmission right markets in more than 120 electric utility control and/or market centers around the world.

An IEEE Life Fellow, Stott is the president of Stott, Inc., Scottsdale, AZ, USA.
The IEEE Richard Harold Kaufmann Award was established by the IEEE Board of Directors in 1986. The award is named in honor of Richard Harold Kaufmann in memory of his many important contributions to industrial systems engineering and his dedicated service to the IEEE Industry Applications Society. This award is presented for outstanding contributions in industrial systems engineering.

Recipient selection is administered through the Technical Field Awards Council of the IEEE Awards Board. The award may be presented to an individual, or team of up to three people.

Recipients of this award receive a bronze medal, cash prize, and certificate.

**Supporter:** IEEE Industry Applications Society

**Current Committee Members:**  
*Based on available information*

- Kaushik S. Rajashekara, (Chair)
- Erling C. Hesla
- Hao Huang
- Xiaodong Liang
- Annette Muetze
- Adam Skorek
- Geoffrey R. Walker

**Past Recipients:**  
*Complete listing is available on website*

- 2014  Robert D. Lorenz
- 2015  Charles John Mozina
- 2016  G. S. Peter Castle
- 2017  Erling Hesla
- 2018  Greg Charles Stone
- 2019  Susumu Tadakuma
- 2020  Kouki Matsuse
IEEE Richard Harold Kaufmann Award

STEPHEN MCAFARTHUR
2021 Recipient

For innovative contributions to the advancement of intelligent systems for power engineering applications

STEPHEN MCAFARTHUR is an expert in the industrial application of intelligent systems for power and energy sectors. He integrates state-of-the-art artificial intelligence research with established industry techniques to deliver applications that enhance energy system operation, control, and management; sets the agenda for international research into multiagent systems for power applications with seminal research papers; leads the United Kingdom’s EPSRC Centre for Doctoral Training in Future Power Networks and Smart Grids; and has provided research leadership in smart grids through the HubNet program in the UK. Of note, McArthur oversaw the creation and deployment of an intelligent system for postfault analysis that has been in use by protection engineers at ScottishPower Energy Networks, along with diagnostic and predictive applications used within EDF’s nuclear power plants, to enhance monitoring, inspection, and lifetime extension.

An IEEE Fellow, McArthur is a distinguished professor with the University of Strathclyde, Glasgow, UK.
IEEE PES CSEE Yu-Hsiu Ku Electrical Engineering Award

The IEEE PES CSEE Yu-Hsiu Ku Electrical Engineering Award was initiated by the IEEE Power & Energy Society and Chinese Society for Electrical Engineering (CSEE) in 2009.

The award specifications include the recognition of a professional who has demonstrated excellent performance in the fields of electrical engineering, electrical machinery, and other related areas. The recipient's contributions in electrical engineering are evaluated based on technical innovations and well recognized contributions in electrical power engineering and associated fields.

The award was established to commemorate Dr. Yu-Hsiu Ku (1902-2002), who made great contributions in mathematics, electrical machinery, and modern control theory during his longstanding career in the USA and China.

Dr. Yu-Hsiu Ku was born in 1902; he entered Beijing Tsinghua School (the former Tsinghua University) at the age of 14. In 1923, he was sent to study at the Massachusetts Institute of Technology (MIT), USA. He was the first Chinese to obtain the doctor's degree at MIT. Dr. Ku was the recipient of the IEEE Lamme Medal (1972) and the IEEE Millennium Medal (1999). He was also the founding member of CSEE.

This award includes a plaque, a certificate, and a cash prize of $2,000 USD.


Current Committee Members: Based on available information

John McDonald (Co-Chair)
Zhou Xiaoxin (Co-Chair)
Cheng Shijie
Mohammad Shahidehpour
Jin Hongguang
Arun Phadke

Past Recipients: Complete list can be found online

2014  MA Weiming
2015  ZHANG Boming
2016  SUN Guanghui
2017  CHEN Deshu
2018  WEI Shirang
2019  GE Yaozhong
2020  CHEN Chen
IEEE PES CSEE Yu-Hsiu Ku Electrical Engineering Award

**RENMU HE**
2021 Recipient

*For contributions in measurement-based load modeling of power systems*

**RENMU HE** received a B.S. from Tsinghua University, Beijing, China, in 1967 and a Ph.D. from the Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland, in 1984. In her doctoral dissertation, she laid the foundation of the measurements-based power system load modeling by first decoupled the measured voltage and power at a single bus using linear dynamics system.

After returning to China in 1985, she began to develop load characteristic recorders funded by the Chinese Ministry of Electric Power. The recorders have been installed in many substations under various voltage levels and have recorded large amount of real data. Using these data, she proposed a set of load dynamic characteristics modeling technology including mechanism model, mathematical function model, and artificial neural network model, etc. After analyzing the data accumulated from 220kV buses with frequent voltage disturbance over the course of three to four years, she found that the load characteristics could be represented by a low-dimensional spatial structure. The findings laid the foundation for the dynamic mechanism model with physical insight, which has been proved to be the most valuable load modeling technology to date.

During 2003 and 2005, she participated in two, three-phase, short circuit disturbance experiments in the 500kV transmission lines in the Northeast China power grid. The comparison between the recorded data from the real-world experiments and the simulated data using the proposed load modeling method has verified the effectiveness and usefulness of her work.

She has also made considerable contributions to wide-area measurement system (WAMS) and low-frequency oscillation on resonance mechanism. Over the course of her career, she has published more than 200 research papers and been the recipient of six Scientific and Technological Awards of the ministerial or provincial level.
IEEE PES Award for Excellence in Power Distribution Engineering

Distribution represents a major utility investment for the transportation of electrical power. It is critical to the quality, reliability, and economy of the product. This award was established to recognize those individuals who have contributed to the growth and value of the technology.

This award is established to recognize individuals who have made remarkable engineering contributions to the field of distribution technology. The selection committee considers all candidates brought to its attention whose work has resulted in substantial improvements to the effectiveness and utilization of power distribution.

This award consists of a plaque, a cash prize of $1,000 USD, and a travel subsidy to attend the PES Awards Ceremony.

Supporter: PES Award Endowment Fund

Current Committee Members:
Based on available information

J. S. McDaniel (Chair)
R. C. Dugan
L. Taylor
P. Barker
D. Ward
T. Short

Past Recipients:
Complete listing is available on website

2014 Thomas J. Tobin
2015 Elisabeth A. Tobin
2016 John J. Grainger
2017 James D. Bouford
2018 Daniel Sabin
2019 Charles DeNardo
2020 Thomas R. Beckwith
IEEE PES Award for Excellence in Power Distribution Engineering

THOMAS E. McDERMOTT
2021 Recipient

For contributions to simulation techniques for power distribution systems, including integration of distributed energy resources and modeling lightning transients

THOMAS E. McDERMOTT (S’77, M’81, SM’92, F’14) is a chief engineer in the Distributed Systems Group and the solar sub-sector lead at Pacific Northwest National Laboratory (PNNL). His career began with electromagnetic transient program (EMTP) studies of sub-synchronous resonance and switching transients at Westinghouse. This work led to a principal investigator's role on EPRI projects to enhance the EMTP, and a later EPRI project to develop the Lightning Protection Design Workstation while at Power Technologies (now Siemens PTI). The resulting software brought EMTP methods to practical use for distribution line lightning protection, especially for analyzing the energy and charge duties on distribution line arresters. McDermott contributed to IEEE Standards 1243 and 1410 on lightning protection, including updates to the IEEE Flash software for estimating flashover rates. In the mid-1990s and the early 2000s, he was at Ansoft (now part of Ansys) working on finite element software and circuit simulation products, where he learned methods for developing software that could solve large problems. That experience proved helpful at Electrotek Concepts where McDermott worked with Roger Dugan to develop OpenDSS, an open-source distribution system simulator that has more than 100,000 downloads and was the start of their 30-year collaboration together. McDermott’s Ph.D. thesis paper on distribution system reconfiguration, with Robert Broadwater advising, has over 190 citations on IEEEExplore. He has led writing groups for IEEE 1547, and currently serves as the U.S. lead to IEC TC57/WG13, which covers distribution networks in the Common Information Model (CIM). At PNNL, his work has focused on open-source GridAPPS-D software, transactive energy simulations, protection system security and modernization, standards for software interoperability and distributed energy resource integration, and photovoltaic inverter modeling. McDermott holds a B.S. and M.E. in Electric Power Engineering from Rensselaer, a Ph.D. in Electrical Engineering from Virginia Tech, and a P.E. license in Pennsylvania.
IEEE PES Cyril Veinott
Electromechanical Energy Conversion Award

This award recognizes outstanding contributions in the field of electromechanical energy conversion. Research and developments on electric motors continued throughout the 20th century and into the 21st to the point that such devices have now become an integral part of our lives. The current ubiquitous presence of the electric motor in everything we do has resulted from the work of dedicated engineers throughout the world.

The award is named for the man responsible for numerous practical improvements in the design and application of electric motors over 50 years: Dr. Cyril Veinott.

Veinott made seminal contributions to the development of poly-phase induction motors, 400 Hz aircraft motors, and was a pioneer in the application of digital computers to the design of electric motors; was responsible for the early measurements and mitigation of electric motor noise; helped write many IEEE and NEMA standards for electric motors; and was the first person to be inducted into the Hall of Fame created by the Small Motor Manufacturers Association in 1985.

This award consists of a plaque and a cash prize of $5,000 USD.

Supporter: Dr. Cyril Veinott

Current Committee Members:
Based on available information

Nils Nilsson (Chair)
James Edmonds
Jim Michalec
Oleg Wasynezuk
Kay Chen

Past Recipients:
Complete listing is available on website

2014  James S. Edmonds
2015  Babak Fahimi
2016  William R. McCown
2017  Gérard-André Capolino
2018  Steve Pekarek
2019  Kiruba Sivasubramaniam Haran
2020  Dan M. Ionel
IEEE PES Cyril Veinott
Electromechanical Energy Conversion Award

BULENT SARLIOGLU
2021 Recipient

For contributions to the design, development, and manufacturing of electric motors and drives for industrial and aerospace applications

BULENT SARLIOGLU is a Jean van Bladel Associate Professor with the University of Wisconsin-Madison, and the associate director of the Wisconsin Electric Machines and Power Electronics Consortium. From 2000 to 2011, he was with Honeywell International Inc.'s Aerospace Division, Torrance, CA, USA, most recently as a staff systems engineer. Sarlioglu conceived, prototyped, and developed products that are used in aircraft today, including in the A350 and A380. He received his Ph.D. from the University of Wisconsin-Madison.

Sarlioglu's expertise includes electrical machines, drives, and power electronics, with a particular emphasis on electrification of transportation and industrial applications. He is the inventor and/or co-inventor of 20 U.S. patents and many international patents. In addition, he has published more than 200 technical papers in conference proceedings and journals. Sarlioglu was the recipient of the Honeywell's Outstanding Engineer Award in 2011 for his outstanding contribution to aerospace, the NSF CAREER Award in 2016, and the 4th Grand Nagamori Award from Nagamori Foundation, Japan, in 2018.

Sarlioglu is involved in many IEEE activities. He currently is chair of the PES Motor Subcommittee; IAS Transportation Committee, Educational Activity; and PELS TC4 Electrical Transportation Systems; is a co-editor of the IEEE Electrification Magazine; and was named a IEEE IAS Distinguished Lecturer. His past activities include being the general chair of ITEC 2018, technical program co-chair for ECCE 2019, and a special session chair in ECCE 2020.
The IEEE PES Leadership in Power Award was established in 2007 to recognize industry leaders for exceptional contributions to the promotion of the electric power engineering profession. The award is particularly intended to highlight actions that have encouraged the development and growth of electric power engineering practitioners and the recognition of the contributions electric power engineers have made to society. In this era, electric utility leaders who recognize the crucial importance of power engineering in the safe, reliable, and economical generation. Transmission and distribution of electricity are rare, and this award is to recognize them for their insight and wisdom.

Recipients must be active in the electric power industry, but do not need to be IEEE members. Selection is based on evaluations of accomplishments as revealed by documented testimonials from industry members. Of particular importance is evidence of the candidate’s promotion of the importance of the power engineering profession and the people practicing it. Work in encouraging industry involvement with university power engineering programs, encouraging young engineers through mentoring and career development programs. Recognition programs for power engineers, encouragement of professional activities by practitioners, etc., are also considered.

The award consists of a sculpture, $2,000 USD cash prize, and a travel stipend of up to $2,000 USD.

**Supporter:** PES Award Endowment Fund

**Current Committee Members:**
*Based on available information*

Veronika Rabl (Chair)
B. Chalamala
Lalit Goel
David Roop
Joseph Svachula

**Past Recipients:**
*Complete listing is available on website*

2014    David W. Roop
2015    John W. Estey
2016    Gordon van Welie
2017    Joseph E. Svachula
2019    Maureen A. Borkowski
2020    M. Michelle Blaise
IEEE Power & Energy Society
Leadership in Power Award

MARK CARPENTER
2021 Recipient

For supporting the development of engineering resources to advance power systems solutions, sponsoring mentoring programs, and promoting industry professionals collaboration

MARK CARPENTER is a senior vice president of transmission and distribution operations at Oncor, where he has spent his entire career. Over his 46-year-career, Carpenter has held various field management and engineering management positions in the transmission and distribution of electrical energy. Previous assignments also include vice president-chief information officer, vice president-chief technology officer, director of engineering, and director of system protection. Throughout, he has focused on developing people and creating high performance teams.

Carpenter earned a bachelor’s degree in electrical engineering at Texas Tech in 1975 and is active in professional activities. He is an IEEE Fellow, an honorary member of the IEEE Power System Relaying Committee, a member of the IEEE/PES Industrial Advisory Council, and a member of the Texas Society of Professional Engineers. He is a registered Professional Engineer in the State of Texas and is on the Dean of Engineering Council at Texas Tech.

Carpenter is also active in the community as demonstrated by his involvement with the Chinese Institute of Engineers DFW Chapter and as President of Family Promise of Irving, a non-profit organization that assists homeless family regain their foothold by providing safe housing and developmental opportunities in conjunction with a network of Irving-based churches. He is active in his church and is married with five children, four daughters-in-law, and nine and-one-half grandkids.
IEEE PES Nari Hingorani Custom Power Award

The award has been named by PES to honor Dr. Narain Hingorani. Power electronics and other static controllers are making a major impact on future power systems through application in transmission, distribution, and small generation. Applications in transmission and distribution include high voltage direct current (HVDC), the Flexible AC transmission System (FACTS), and Custom Power. Since the introduction of FACTS and Custom Power concepts, the technology has been moving ahead at an increasing pace. Very significant near- to - long-term benefits of FACTS and Custom Power technologies are now recognized in the industry. The FACTS and Custom Power Awards are given to individuals who have made a major contribution to FACTS and Custom Power technologies and their applications.

The IEEE definition of Custom Power is:

"The concept of employing power electronic (static) controllers in 1 kV through 38 kV distribution systems for supplying a compatible level of power quality necessary for adequate performance of selected facilities and processes."

This award consists of a plaque, engraved medal, and a cash prize of $2,000 USD.


Current Committee Members:
Based on available information
Ram Adapa (Chair)
P. Adam
H. Akagi
M. Mohaddes
M. Szechtman
G. F. Tang
E. Watanabe

Past Recipients:
Complete listing is available on website
2014 Harshad Mehta
2016 Rambabu Adapa
2017 Bhim Singh
IEEE PES Nari Hingorani Custom Power Award

AMBRISH CHANDRA
2021 Recipient

For contributing in improvement of power quality and grid integration of renewable energy sources

RAJENDRA PRASAD SASMAL received B.E. degree from the University of Roorkee (presently IITR), India, M. Tech. from IIT Delhi, and Ph.D. from University of Calgary, Canada, in 1977, 1980, and 1987, respectively – all in the area of electrical power. He has been a Full Professor of Electrical Engineering with the École de Technologie Supérieure (ÉTS), Montréal, QC, Canada, since 1999. Before joining ÉTS as an associate professor in 1994, he worked as a Faculty Member at IIT Roorkee. From 2012 to 2015, he was the director of multidisciplinary graduate program on Renewable Energy and Energy Efficiency with ÉTS. He is currently the director of master program in electrical engineering.

Chandra’s most distinctive work is related to the advancement of new theory and control algorithms for power electronics converters in the following two areas: 1) power quality improvement in distribution systems 2) integration of renewable energy sources to distribution systems with improved power quality features. His work has had a significant impact and is now extensively referred by engineers and researchers around the world, as evidenced by Google citations of more than 20,000, h-index 54, and i10-index 257. A Distinguished Lecturer of IEEE Power and Energy Society (2015-2020), as well as a Distinguished/Prominent Lecturer of IEEE Industry Applications Society (2017-2021) on ‘Power-Quality and Renewable-Energy’, Chandra and has been invited to deliver distinguished lectures around the world.

He is coauthor of John Wiley book ‘Power Quality – Problems and Mitigation Techniques.’ He is Fellow of many organizations, including IEEE, Canadian Academy of Engineering, Institute of Engineering and Technology U.K., Engineering Institute of Canada, IE (India), and IETE (India), and is registered as a professional engineer in Quebec, Canada. He is the recipient of the IEEE Canada P. Ziogas Electric Power Award 2018, as well as the ‘IEEE Power and Energy Society Nari Hingorani Custom Power Award 2021.'
IEEE PES Nari Hingorani FACTS Award

The award has been named by PES to honor Dr. Narain Hingorani. Power electronics and other static controllers are making a major impact on future power systems through application in transmission, distribution, and small generation. Applications in transmission and distribution include high voltage direct current (HVDC), the Flexible AC transmission System (FACTS), and Custom Power. Since the introduction of FACTS and Custom Power concepts, the technology has been moving ahead at an increasing pace. Very significant near-to-long-term benefits of FACTS and Custom Power technologies are now recognized in the industry.

The FACTS and Custom Power Awards are awarded to individuals who have made a major contribution to FACTS and Custom Power technologies and their applications.

The IEEE definition of FACTS is:

"Alternating Current Transmission Systems incorporating power electronics-based and other static controllers to enhance controllability and power transfer capability."

This award consists of a plaque, engraved medal, and a cash prize of $2,000 USD.


Current Committee Members: Based on available information
Jingxuan (Joanne) Hu (Chair)
Mojtaba Mohaddes
Georg Pilz
Edson Watanabe
G. F. Tang
Ben Mehraban
Manfredo Correa Lima
Bruce Fardanesh

Past Recipients: Complete listing is available on website
2014    Ned Mohan
2015    Richard Piwko
2018    Bruce Fardanesh
2020    R. P. Sasmal
IEEE PES Nari Hingorani FACTS Award

Rajiv K. Varma
2021 Recipient

For advancing FACTS controllers application in education, research, and professional society, and for developing an innovative STATCOM technology utilizing PV solar farms

Rajiv K. Varma is currently a professor and past hydro one research chair in power systems engineering in the Electrical and Computer Engineering Department at University of Western Ontario (UWO), London, Ontario, Canada. Before joining UWO in 2002, he was a faculty member at Indian Institute of Technology Kanpur, India, for 11 years.

Varma is the current chair of the IEEE PES HVDC and FACTS Subcommittee and was previously chair of the IEEE Working Group on HVDC and FACTS Bibliography from 2004 to 2019. He co-authored the book *Thyristor-Based FACTS Controllers for Electrical Transmission Systems*, published by IEEE Press/Wiley in 2002, which also had Chinese and Southeast Asian editions. He co-delivered several tutorials on Static Var Compensator (SVC) conducted by the IEEE Substations Committee and presented numerous IEEE tutorials, courses, and workshops on FACTS and HVDC internationally.

Further, Varma developed a new cost-effective technology for night and day utilization of solar PV systems as STATCOM, named PV-STATCOM, for providing several benefits in transmission and distribution systems. He led a successful demonstration of the PV-STATCOM for the first time in Canada (and, in fact, the world) on December 13, 2016, in the utility network of Bluewater Power in Sarnia, Canada. For this technology, he holds 17 granted patents and 14 pending patents in the U.S., Canada, Europe, China, and India. He received the Prize Paper Award from IEEE PES in 2012 and First Place Poster Award in the 7th International IRED Conference in 2016 for this research.

He was the team-lead for the first-ever IEEE Tutorial on “Smart Inverters for Distributed Generators” in the IEEE PES T&D Conference in 2016 and in PES General Meetings in 2017, 2018, and 2019.

He received 13 teaching excellence awards at the university and faculty levels at UWO. He obtained B.Tech. and Ph.D. degrees in Electrical Engineering from IIT Kanpur, India, in 1980 and 1988, respectively.
IEEE PES Outstanding
Power Engineering Educator Award

This award recognizes excellence in classroom teaching, course development and the promotion of student, local, transnational and technical activities.

The recipient must provide classroom instruction in electrical engineering at a college or university with an accredited electrical engineering program or equivalent, be a member of PES for at least one year, and be nominated by any PES member and endorsed by the chapter or technical committee of which the individual is a member.

The award consists of a plaque and cash prize of $1,000 USD.

Supporter: PES Award Endowment Fund

Current Committee Members: Based on available information
Antonio Conejo (Chair)
Ming Ni
Thomas Overbye
Mohammad Shahidehpour
Ross Baldick
Mariesa Crow
Claudio Cañizares
Antonio Gomez Exposito
Ram Adapa

Past Recipients: Complete listing is available on website
2014  Ali Abur
2015  Ross Baldick
2016  Mariesa L. Crow
2017  Claudio Adrian Cañizares
2018  Antonio J. Conejo
2019  Antonio Gómez-Expósito
2020  Marija Ilić
IEEE PES Outstanding Power Engineering Educator Award

SHMUEL S. OREN
2021 Recipient

For contributions to mentorship and education on the design and operation of electricity markets

SHMUEL S. OREN is a graduate professor and the Earl J. Isaac Professor in the Science and Analysis of Decision Making in the Department of Industrial Engineering and Operations Research at the University of California at Berkeley and former chairman of that department. He is a co-founder, and the Berkeley site director, of PSerc – a multi-university Power Systems Research Center sponsored by the National Science Foundation and industry members since 1996. He has also been a member of the California ISO Market Surveillance Committee. Prior to his current position, he was on the faculty of The Engineering Economic Systems Department at Stanford University and worked as a research scientist at the Xerox Palo Alto Research Center (PARC).

He has co-authored over 220 papers in archival journals, conference proceedings, and book chapters on optimization, pricing, energy economics, electricity systems planning and scheduling, and electricity market design. He co-edited a book on New Service Opportunities for Electric Utilities and has given numerous invited public lectures and tutorials worldwide. He also served on the editorial boards of several journals. Over four decades, he has been teaching courses in optimization, decision analysis, and market engineering and supervised 38 Ph.D. students who currently hold prominent positions in academia and industry.

Additionally, Oren has served as a consultant on market design issues to numerous private and public organizations in the electricity industry in the U.S. and abroad, including the California Public Utility Commission, the Public Utility Commission of Texas, the Colombian energy regulator, and the Israeli Power Utility Authority.

He holds B.Sc. and M.Sc. degrees in Mechanical Engineering from the Technion, Israel, and M.S. and Ph.D. degrees in Engineering Economic Systems from Stanford University. He is a IEEE Life Fellow, Fellow of INFORMS, and member of the U.S. National Academy of Engineering.
IEEE Fellows Class of 2021

Enrique Acha
for contributions to power electronics modelling and applications in electrical power systems

Alireza Bakhshai
for contributions to the development of synchronization techniques for power electronics converters

Oriol Gomis Bellmunt
for contributions to grid integration of renewable energy sources

Yaow-Ming Chen
for contributions to grid-connected power converters for renewable energy applications

Vasilis Fthenakis
for contributions to photovoltaics technology

Wenzhong Gao
for contributions to grid integration of wind power and electric vehicle technology

Hua Geng
for contribution to control of renewable energy power converters

Yongpei Guan
for contributions to robust and stochastic optimization for power system operations
IEEE Fellows Class of 2021

Dragan Jovcic
for contributions to improvements in multi-terminal HVDC transmission grids and development of HVDC transformers

Ning Lu
for contributions to load modeling and control methods for providing demand side grid services

Giovanni Mazzanti
for contributions to high voltage direct current cable systems

Sanjib Panda
for contributions to iterative learning control of motor drives

Leila Parsa
for contributions to control of multi-phase permanent magnet electrical drives

Jacqueline Scherpen
for contributions to nonlinear model reduction and passivity-based control

Kalyan Sen
for the development and application of power flow control technology

Ramteens Sioshansi
for contributions to energy storage in electric power systems
IEEE Fellows Class of 2021

Poul Sørensen
for contributions to wind power converter control and grid integration

Suresh Srivastava
for contributions to power system security and stability

Shinzo Tamai
for contributions to control for motor drives and three-level converters

Mi-Ching Tsai
for leadership in magnetic materials for the electric motor industry

Mohammad Uddin
for contributions to control techniques for AC motor drives

Ganesh Venayagamoorthy
for contributions to the application of artificial intelligence to power systems

Jianhui Wang
for contributions to unit commitment and economic dispatch with renewable generation

Zhongdong Wang
for contributions to insulating liquids and frequency response analysis methods for power transformers
IEEE Fellows Class of 2021

Jin Wang
for development of high density power converters and their use in electric cars

Fushuan Wen
for contributions to fault diagnosis in power grids

Wenchuan Wu
for contributions to energy management, operations, and control

Zheng Xu
for contributions to control and modeling of modular multilevel converter based HVDC transmission systems

Hamidreza Zareipour
for contributions to the modeling of energy storage for system operation and planning

Jizhong Zhu
for application of optimization methods for real-time economic power system operation

Committee Members:

Maria Teresa Correia de Barros (Chair, Region 8)
Kwok Cheung (Vice Chair, Region 6)
Thierry Van Cutsem (Vice Chair, Region 8)
Roger Dugan (Vice Chair, Region 3)

Members:
Sandoval Carneiro, Region 9
Chandan Chakraborty, Region 10

Chi-Yung Chung, Region 7
Jinliang He, Region 10
Iqbal Husain, Region 3
Joydeep Mitra, Region 4
Kip Morison, Region 7
Vincenzo Piuri, Region 8
Wanda Reder, Region 4
Kevin Schneider, Region 6
IEEE PES Outstanding Young Engineer Award

This award recognizes outstanding contributions in the leadership of technical society activities including local and/or transnational PES and other technical societies, leadership in community and humanitarian activities, and evidence of technical competence through significant engineering achievements.

The recipient of the IEEE PES Outstanding Young Engineer Award must be 35 years of age or under on January 1 of the year the award is presented, be a member of PES for at least one year, and have a minimum of a B.S. in Electrical Engineering from an accredited electrical engineering program or equivalent. He or she can be nominated by any PES member and must be endorsed by the chapter or technical committee of which the individual is a member.

This award consists of a plaque and the recipient will designate a college or university with an accredited program in electrical engineering or equivalent to receive a $2,000 USD scholarship for an electrical engineering undergraduate.

(Through 2007, the recipient received the Walter Fee Outstanding Young Engineer Award)

Supporter: PES Award Endowment Fund

Current Committee Members:
Based on available information
A. P. Sakis Meliopoulos (Chair)
Mike Ingram
Joydeep Mittra
Steve Widergren
Chris DeMarco

Past Recipients:
Complete listing is available on website
2014  Shay Bahramirad
2015  Siddharth Suryanarayanan
2016  Kory W. Hedman
2017  Le Xie
2018  Ali Mehrizi-Sani
2019  Sairaj Dhople
2020  Zhaoyu Wang
IEEE PES Outstanding Young Engineer Award

DANIEL KENNETH MOLZAHN
2021 Recipient

For contributions to the theory and practical application of nonlinear optimization algorithms for electric power systems

DANIEL KENNETH MOLZAHN is an assistant professor in the School of Electrical and Computer Engineering at the Georgia Institute of Technology. His research focuses on the development of optimization and control algorithms to improve the reliability, resiliency, and efficiency of electric power systems. Molzahn is also an associate staff member in the Energy Systems Division at Argonne National Laboratory. He was previously a Dow Postdoctoral Fellow in Sustainability at the University of Michigan. Molzahn received B.S., M.S., and Ph.D. degrees in Electrical Engineering and the Master of Public Affairs degree from the University of Wisconsin–Madison, where he was a National Science Foundation Graduate Research Fellow. He is a fellow of the Georgia Tech Strategic Energy Institute and is the faculty advisor for the Georgia Tech Energy Club. Molzahn’s team took second place out of 27 teams in the Department of Energy ARPA-E Grid Optimization Challenge 1 Competition. He is also the chair of the technical program committee for the 22nd Power Systems Computation Conference and is co-organizing a session at the National Academy of Engineering’s 2021 US-EU Frontiers of Engineering Symposium. Molzahn is the co-founder and co-chair of the IEEE PES Working Group on Computational Challenges and Solutions for Implementing Distributed Optimization in the Power System, the co-chair of the IEEE PES Task Force on Benchmarks for Validation of Emerging Power System Algorithms, and a member of the IEEE PES Intelligent Grid and Emerging Technologies Coordinating Committee (IGETCC).
As the development of the complex system known as the interconnected bulk power system unfolded around the world, it became critical to understand its nonlinear behavior as well as develop and deploy system controls vital to manage dynamic system behavior to ensure reliability. Even today, as the bulk power system evolves to accommodate an unprecedented change in resource mix and technology innovation, it is critical to manage integration of new and emergent technologies. Without this ability to model the general dynamic behavior of the bulk power system and devise suitable coordinated systems controls, the modernization of the bulk power system would be inhibited. These developments come from the work of dedicated engineers who devote their careers to the deep understanding of bulk power system dynamic behavior, including transient, small-signal, voltage, and frequency stability, along with the development of controls vital to support bulk power system security and quality of power supply.

Recipients must have been an IEEE PES member for at least 10 years with tangible and visible achievements in this area.

This award consists of a plaque and a cash prize of $3,000 USD.

Supporters: Friends and colleagues of Prabha S. Kundur

Current Committee Members:  
Based on available information

Pete Sauer (Chair)  
Nelson Martins  
Göran Andersson  
Costas Vournas  
Nikos Hatzigiargiou

Past Recipients:  
Complete listing is available on website

2014 Peter W. Sauer  
2015 Nelson Martins  
2016 Göran Anderson  
2017 Nikolaos Hatzigiargiou  
2018 Vijay Vittal  
2019 Constantine Vournas  
2020 Michael J. Gibbard
DAVID J. HILL (S’72-M’76-SM’91-F’93-LF’14) received the Ph.D. degree in Electrical Engineering from the University of Newcastle, Australia, in 1976. From 2021, he is a professor in the School of Electrical Engineering and Telecommunications, The University of New South Wales, Sydney, Australia, and a program leader in The Reliable Affordable Clean Energy for 2030 Cooperative Research Centre. He is also professor emeritus at The University of Sydney and The University of Hong Kong.

During 2013-2020, he held the positions of chair of electrical engineering and director of the Centre for Electrical Energy Systems in the Department of Electrical and Electronic Engineering at the University of Hong Kong. He previously held positions at the University of Sydney, including the chair of Electrical Engineering during 1994-2002 and again in 2010-2013 along with an Australian Research Council Professorial Fellowship. He was foundation director of the Centre for Future Energy Networks during 2010-2018. During 2005-2010, he was an ARC Federation Fellow at the Australian National University. He has also held academic and substantial visiting positions at the universities of Melbourne, California (Berkeley), Newcastle (Australia), Lund (Sweden), Munich, and City University of Hong Kong.

His research activities have been in power system modelling, analysis, control, and planning. His work is now mainly focused on future energy and power and energy networks with the aim to bring science to accelerate the clean energy transition. He is also a consultant in the area of power and energy issues in Australia and internationally.

Hill is a Fellow of the Society for Industrial and Applied Mathematics, USA; the International Federation of Automatic Control; the Australian Academy of Science; the Australian Academy of Technological Sciences and Engineering; and the Hong Kong Academy of Engineering Sciences. He is also a foreign member of the Royal Swedish Academy of Engineering Sciences.
This award, established in 2011, recognizes outstanding contributions in the field of developing, utilizing and integrating renewable energy resources, particularly those that have minimal carbon footprints, in the national and global energy scenarios. Feeding the electrical energy generated from innovative conversion technologies into conventional utility grids and operating the combined system satisfactorily, plus the effective use of locally available renewable energy resources in remote and rural areas to improve the human living environment are major components in this mix. The need to stimulate and encourage activity towards these goals is the primary objective of this award.

Recipients must be members of IEEE and PES with clearly identifiable and valuable contributions in the field of renewable energy.

This award consists of a plaque and cash prize of $1,000 USD.

**Supporter:** The Ramakumar Family

**Current Committee Members:**
*Based on available information*

- Ward T. Jewell (Chair)
- Vladimir Miranda
- Ziyad Salameh
- Charlie Smith
- E. Muljadi
- Rama Ramakumar
- K. Strunz
- Hashem Nehrir
- Nicholas Miller
- Mohammad Shahidehpour

**Past Recipients:**
*Complete listing is available on website*

- 2014  J. Charles Smith
- 2015  Ziyad M. Salameh
- 2016  M. Hashem Nehrir
- 2017  Thomas S. Key
- 2018  Nicholas W. Miller
- 2019  Mohammad Shahidehpour
- 2020  Benjamin Kroposki
MUKESH NAGPAL is a principal engineer at BC Hydro, a Senior Member and distinguished lecturer of the IEEE Power & Energy Society (PES), an adjunct professor at the University of British Columbia (BC), a professional engineer in the Province of British Columbia, and a Fellow of Engineers Canada. He has published approximately 50 technical papers with notable contributions to the economic, safe, and reliable integration of renewables to the electric grid.

Nagpal’s multiterminal line protection solutions permit distributed renewable energy resource connections to the grid at a fraction of the cost of those in a traditional centralized architecture. Using these solutions, his team has safely integrated numerous renewables to BC Hydro’s grid, saving more than half a billion dollars. This work contributed to the BC government’s goals under the 2008 Clean Energy Act and resulted in him receiving the highest engineering order of BC in 2016 from Engineers and Geoscientists of BC. In 2017, he received BC Hydro’s Innovation Technical Solution Award for devising safe and economic tap-connections of “green” generators. His IEEE paper on this work received the 2017 Best Paper Award from the Protection Committee.

Nagpal identified and mitigated public safety risks related to undetected ground faults on transmission lines with inverter-based resources. The solution relies upon characteristics of the unit transformers used for connecting these resources. Nagpal demonstrated that the unit transformer largely removes the influence of the inverter on zero sequence current and practically eliminates its impact on ground detection. His IEEE paper on this work received the 2018 Best Paper Award from the Protection Committee.

Nagpal received the 2016 Outstanding Engineer Award from the IEEE PES Vancouver Section and is a recipient of many BC Hydro excellence awards.
IEEE PES Roy Billinton Power System Reliability Award

This award was created in honor of Roy Billinton, professor emeritus at the University of Saskatchewan, Canada. Billinton is an IEEE Life Fellow, foreign associate of the U.S. National Academy of Engineering, fellow of the Royal Society of Canada, and fellow of the Canadian Academy of Engineering. He has published over 850 papers and eight books; has given tutorials, presentations, and seminars in over thirty countries; delivered over 100 short courses on system reliability; and served on IEEE PES committees and other industry committees. He has also supervised more than 120 Ph.D. and master’s degree candidates who are spread throughout the United States, Canada, and other countries.

Areas covered by the award include modeling, analysis, and data development to quantify power system reliability, and assessments to plan and operate reliable electric utility generation, transmission, distribution systems, or interconnected power system grids.

The recipient of the IEEE PES Roy Billinton Power System Reliability Award receives a plaque and a cash prize of $3,000 USD.

Supporter: Past students, other associates of Dr. Roy Billinton and selected organizations

Current Committee Members: Based on available information
Wenyuan Li (Chair)
A. M. Leite da Silva
R. Allan
C. Grigg
M. Lauby

Past Recipients: Complete listing is available on website
2014 Mark G. Lauby
2015 Murty P. Bhavaraju
2016 Robert James Ringlee
2017 Alton DeWitt (Dee) Patton
2018 George J. Anders
2019 Joydeep Mitra
2020 Milorad Papic
IEEE PES Roy Billinton
Power System Reliability Award

CHONGQING KANG
2021 Recipient

For contribution to power system reliability analysis and enhancement under high renewable energy penetration

CHONGQING KANG is professor and dean of the Department of Electrical Engineering at Tsinghua University. He is also the president of Sichuan Energy Internet Research Institute, Tsinghua University, and a Fellow of both IEEE and IET.

Kang established the fundamental Sequence Operation Theory that can be directly used for efficient and accurate power system reliability assessment via stochastic operation simulation. It can also handle the complex dependencies among the uncertainty of power systems so that the correlated contingency of power systems and correlation of renewable energy can be well considered. He is also responsible for creating extended power systems reliability analysis to multi-energy system reliability so that the dependencies among different energy systems can be considered. Aiming at probabilistic methods applied to power systems, he also developed advanced data analytical approaches to model the uncertainties within the power systems, which are important inputs/premises for reliability studies. Additionally, he has contributed to the risk-aware operation with high penetration of renewable energy to enhance the power system reliability and has developed a power system operation simulation tool that has been used in many power grid companies to analyze the impact of high penetration of renewable energy on power system planning.

His research interests also include power system operation, renewable energy, low carbon electricity technology, multi-energy systems, and load forecasting. He has published six monographs and more than 300 journal papers (including over 100 IEEE transactions papers) that have attracted over 17,000 citations in Google Scholar. He holds more than 40 authorized invention patents and 15 software copyrights. In 2018, he was awarded the Outstanding Contribution Award to China Electric Power Science and Technology award. He was recognized as Elsevier's Chinese Most Cited Researcher from 2017 to 2020 and serves as member of the IEEE PES Long Range Planning Committee and editor-in-chief of International Transactions on Electrical Energy Systems.
The IEEE PES Uno Lamm High Voltage Direct Current Award was established in 1980 by the recommendation of the DC Transmission Subcommittee. It provides a means for special recognition of those outstanding engineers and scientists who have contributed to the advancement of high voltage direct current (HVDC) technology.

The award is named for the man most responsible for the research and development that led to the first practical application of an HVDC connection between AC systems. The keys to the solution of this problem were the development of an electric valve which could be used in high capacity, high voltage converters, and a fundamental system technology. This outstanding engineer and scientist was Dr. Uno Lamm, an IEEE Fellow and the 1965 recipient of the Benjamin Lamme Medal.

Dr. Lamm graduated from the Royal Institute of Technology, Stockholm, in 1927 and acquired his Doctorate of Technology in 1943. He joined ASEA in 1928 with the task of developing mercury arc rectifiers as an early assignment. During his career with ASEA, he received progressively more responsible appointments: head of the Rectifier Department; head of ASEA’s Nuclear Department; Electrotechnical Director; and Consultant to the President of ASEA. Dr. Lamm passed away in 1989 at the age of 85.

The IEEE PES Uno Lamm HVDC Award consists of a bronze medal, a plaque and cash prize of $1,000 USD.

Supporters: IEEE Power & Energy Society, Hydro-Quebec, ABB Power Systems and General Electric

Current Committee Members: Based on available information
Abhay Kumar (Chair)
Marcus Haeusler
Vajira Pathirana
Rao Hong

Past Recipients: Complete listing is available on website
2014 Jose Antonio Jardini
2015 Rainer Marquardt
2017 Zehong Liu
2018 Hong Rao
2019 Abhay Kumar (Jain)
2020 Hartmut Huang
IEEE PES Uno Lamm
High Voltage Direct Current Award

HANS BJORKLUND
2021 Recipient

For outstanding contributions and visionary leadership to the development of advanced control and protection systems for HVDC

HANS BJORKLUND works as corporate executive engineer in the field of high voltage direct current (HVDC) control and protection systems at Hitachi ABB Power Grids in Ludvika, Sweden. In this position he oversees the research and development activities for future generations of control systems for VSC and LCC converters from Hitachi ABB Power Grids.

This is the culmination of a long career in the field of HVDC control and protection starting at ASEA in 1974 with the development the world’s first microprocessor based remedial action scheme, the emergency power controller for the Skagerrak HVDC interconnector.

His involvement in control system development over almost five decades has resulted in five generations of leading-edge control systems with numerous breakthrough features such as the world’s first redundant HVDC firing control system with seamless switchover launched in 1982, the function block programming method allowing exact simulation of the C&P system in simulation programs like PSCAD, the DCOCT (optical measuring of direct current) that was a key component to allow HVDC operating voltages to reach 800 and 1100kV.

His development of the MACH system (Modular Advanced Control system for HVDC) has set the standard for HVDC control system design utilizing a combination of multicore microcomputers together with DSPs (digital signal processors) and FPGAs (field programmable gate arrays) and connection of all I/O units over high-speed fiber optic communication links. This very high-performance system was a key element in the successful introduction of HVDC Light, ABB’s VSC HVDC converters in 1999 that marked the start of the transformation of mainstream HVDC toward VSC-based solutions.

Hans Bjorklund has a M.Sc. degree in Electrical Power Engineering from the Royal Institute of Technology (KTH) in Stockholm, Sweden, is a life Senior Member of IEEE, is active in Cigre and IEC, and has authored over 25 papers on HVDC controls.
The IEEE PES Women in Power Committee was created to foster a more diverse leadership by supporting career advancement, networking, and education of women in the electric power and energy industry. One important way this mission is supported is through the formal recognition of a worthy female member of this community.

The IEEE PES Wanda Reder Pioneer in Power Award seeks to recognize a deserving female in the field of power engineering. The award is intended to provide visibility to the awardee’s efforts, accomplishments, and future potential while empowering her to be an inspiration and role model for other women in the industry. The award is in honor of the first female president of IEEE PES, Ms. Wanda Reder.

In addition to recognizing the recipient, the award brings attention to the value of fostering a diverse talent pool. It further empowers the recipient to have a greater influence on the growth and development of others in the industry.

The recipient of this award must be female and at least senior members of the IEEE PES with tangible and visible achievements in one or more of the following:

- Innovation and technology development
- Entrepreneurship and innovative business models
- Education and mentorship
- Related achievements

The awardee will receive a plaque and cash prize of $1,500 USD.

Supporter: S&C Electric

Current Committee Members:
Based on available information

Ruomei Li (Chair)
M. Michelle Blaise
Darcy Immerman
Jackie Peer
Sarah Ronnberg

Past Recipients:
Complete listing is available on website

2014  Jessica J. Bian
2015  Sandra Cecilia Vega Gomez
2016  Jennifer T. Sterling
2017  Meliha B. Selak
2018  Bhuvaneswari Gurumoorthy and Marina Modello
2019  Ruomei Li
2020  Yilu Liu
IEEE PES Wanda Reder Pioneer in Power Award

MARIANELA HERRERA GUERRERO
2021 Recipient

For outstanding contributions and leadership in efficient and reliable operation of public utilities, inclusiveness and diversity of power marketing, and the transformation of the energy structure

MARIANELA HERRERA GUERRERO is the vice president of engineering at ENSA Grupo EPM. She leads and coordinates the strategy of the company in terms of planning, project execution, operations, and maintenance of the network to meet the growth of demand and offer services with quality and reliability, aligned with the core values of the organization.

Guerrero has served as regulations and markets manager at ENSA Grupo EPM, where she promoted the development of new businesses and encouraged innovation. During her career, she has promoted inclusivity and diversity within her teams, and she has worked to provide mentorship to young professionals. In addition, Guerrero was deputy general manager of ETESA, achieving important advancements in the planning and execution of the Transmission Expansion Plan and development of Corporate Governance Plan and Corporate Social Responsibility Policies.

Guerrero has a degree in Electromechanical Engineering from the Technological University of Panama and a graduate certificate in Electric Markets and Regional Integration. She has more than 30 years of experience in the energy sector focusing on marketing, distribution, and transmission.

Currently, Guerrero is president of CECACIER, an organization that brings companies and organizations from the energy sector in the Central American and Caribbean region together. This organization is part of the Regional Energy Integration Commission (CIER).

In 2021, Guerrero became the first Panamanian and the second Latina to be awarded the IEEE PES Wanda Reder Pioneer in Power Award.
IEEE Power & Energy Society
Outstanding Student Scholarship

The IEEE Power & Energy Society is proud to announce the selection of the recipients of the 2021 IEEE PES Outstanding Student Scholarship.

**Luis Felipe Gaitan Cubides** is attending the Universidad Pontificia Bolivariana and is pursuing a master’s degree in Electrical Engineering

**Isabelle Vitória Medeiros dos Santos** is attending the Polytechnic School of the University of São Paulo and is pursuing a master’s degree in Electrical Power Systems

**Juan Fernando Garcia Mathey** is attending the Instituto de Ingeniería UNAM Universidad Nacional Autónoma de México and is pursuing a master’s degree in Electrical Engineering

**Colton Pankhurst** is attending the University of Waterloo and is pursuing a master’s degree in Electrical & Computer Engineering (ECE)- Power & Energy Systems

**Yufeng Xiong** is attending the Tsinghua University and is pursuing a master’s degree in Power Systems

This scholarship recognizes PES student members from around the world who have chosen an academic path leading to an electric power and energy engineering career. Recipients were chosen based on their academic achievements, contributions to meeting community and humanitarian needs, and leadership in advancing student engagement within PES. All recipients will receive $10,000 USD cash prize, as well as complimentary housing and conference registration at a corresponding PES Regional Conference.

**Supporters:** IEEE Power & Energy Society Outstanding Student Scholarship Fund

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**Luis Felipe Gaitan Cubides** graduated in electrical engineering from the Universidad Distrital Francisco José de Caldas, and student of the Master in Engineering of the “Universidad Pontificia Bolivariana” works as Design Engineer in “Ingenieria Especializada IEB S.A.”

An IEEE member since 2013, Cubides led the student chapter of PES during 2014 as vice president and in 2015 as president and student branch chair. During these years, the PES chapter was in the top 10 of the PES HPSBCP and the student branch achieved second place standing in the Success Case of the Regional Meeting, second place in the TISP Contest IEEE R9, first place of Success Case in the IEEE Colombia National Meeting, first place in the Regional Membership Development Contest, and the Exemplary Student Branch Award.

He is currently the PES social media chair, the CSAC R9 student chapter coordinator, and YP regional representative.
IEEE Power & Energy Society
Outstanding Student Scholarship

Isabelle Vitoria Medeiros dos Santos is pursuing a master’s degree in Electrical Power Systems at the Polytechnic School of the University of São Paulo and is a member of the Laboratory of Advanced Electric Grids (LGrid). She is an Electrical Engineer from UFRN/Brazil (2019) and has technical training in Electrotechnics from SENAI/RN (2014) and in IT with an emphasis on Electronics from UFRN (2013). Her expertise and interest lie in electrical machines and renewable energies. She has been a member and volunteer of the IEEE since 2017, being co-founder and past chair of the UFRN Student Branch and of PES UFRN SBC and has also acted in different groups with various positions. She is currently secretary of the IEEE Poli USP SB.

Juan Fernando Garcia Mathey was born in Xalapa, Mexico, in 1998 and raised in Coventry, UK, for several years. He received the Electrical Engineer degree from the University Veracruzana, Mexico, where he served in the student council and graduated with honours. Currently, he is pursuing the Master of Engineering degree in Electrical Engineering program at the University Nacional Autónoma de México.

Colton Pankhurst received the B.Sc. degree in Electrical Engineering in 2020 and is currently pursuing the M.Sc. degree in Electrical and Computer Engineering, both at the University of Waterloo, Canada. He has had a wide range of experiences in the power and energy sector including working with renewable developers, utilities, and government. In addition, Pankhurst is a technical advisor at natural resources Canada, providing technical advice to inform policy and programs on electrification, decarbonisation, and grid modernization. His research interests include transactive energy, peer-to-peer networks, energy markets, and renewable integration. Pankhurst has a strong desire to help achieve the energy system transition towards increased renewable energy sources through market transformation and grid modernization.

Yufeng Xiong received his Bachelor of Engineering Degree from Tsinghua University, where he is currently studying to receive his master’s degree. He is a three-time Tsinghua University Academic Excellence awardee and a two-time Tsinghua University Science and Technology Innovation Excellence awardee. He also received the Meritorious Award in 2018 MCM/ICM.
Xiong held an internship at Sichuan Energy Internet Research Institute in Chengdu, China, working on programming and analysis on control of microgrids. In his research area, he has co-authored four papers that have been published in four different publications.
He was the vice chairman of the Student Science Association in the Department of Electrical Engineering at Tsinghua University in 2018.
IEEE PES Prize Paper Award

Each year, every Technical Committee of the Technical Council is entitled and encouraged to award the author(s) of an outstanding technical paper with the IEEE PES Technical Committee Prize Paper Award. Each committee is also encouraged to nominate a paper from their committee for the Society-level IEEE PES Prize Paper Award; most committees choose to select the same paper. One (or two) paper(s) is chosen from all the committee nominations for the Society-level IEEE PES Prize Paper Award.

The IEEE PES Prize Paper Award consists of a plaque for each author and $200 USD cash prize for a single author; $100 USD cash prize each for two (2) or more authors. This award is funded by the PES Award Endowment Fund.

“Full-Power Test of HVDC Circuit-Breakers with AC Short-Circuit Generators Operated at Low Power Frequency”

Transactions on Power Delivery
Vol. 34, No. 5, pp. 1843-1852, Oct 2019

Authors: Nadew Adisu Belda, Cornelis Arie Plet, and René Peter Paul Smeets
Nadew Adisu Belda received joint M.Sc. in Electrical Power Engineering from Eindhoven University of Technology (TU/e), the Netherlands (graduated with ‘Cum Laude’) and Royal Institute of Technology (KTH), Sweden in 2015. Since 2015, Belda has held the title of innovation engineer at KEMA Labs, where he is responsible for the development of test methods and design of test circuits for HVDC switchgear. He was actively involved in the PROMOTioN (Progress on Meshed HVDC Offshore Transmission Networks) project, where he developed a test method for HVDC circuit breakers. His research work has culminated in full-power testing of HVDC circuit breakers at KEMA’s high power laboratory. He is currently finalizing a Ph.D. degree at Technische Universität Darmstadt, Germany, where he studied as an external candidate. Belda is a member of IEEE, IEC, and CIGRE; and participates in various international working groups. In 2019, he received the Wang Jimei Best Young Investigator award for his contribution at an international conference.

Cornelis Arie Plet is a principal consultant in the field of HVDC system development and offshore power systems with the electrical engineering team in DNV Energy Systems North America. Over the last five years, he has been coordinator of the EU-funded ‘Progress On Meshed Offshore HVDC Transmission Networks’ project, and, as part of this project, led the development of a full-power test environment for HVDC circuit breakers. Plet currently consults transmission system operators, offshore wind developers, and governmental organizations on how to use HVDC technology in the most cost-effective and reliable way to achieve their business goals and climate targets. Prior to this, he carried out numerous failure investigations on high voltage cables and substation equipment. Plet holds and MEng in Electrical & Electronic Engineering, and a Ph.D. in Control of Power Electronics Interfaced Distributed Generators, both from Imperial College London.

René Peter Paul Smeets is an international specialist in switching technology in T&D systems. Since 1995, he has led the innovation of testing technology of electrical substation equipment from 10-1200 kV at KEMA Laboratories, the Netherlands. He holds leading positions in CIGRE and IEC in committees dealing with emerging equipment technologies, such as SF6 alternatives, HVDC, UHV systems, and high-voltage vacuum switchgear. In 2008 he was elected to the rank of fellow of IEEE and acts as chairman of the Current Zero Club. Additionally, he was work package leader in the European ‘PROMOTioN’ project, having responsibility for the full-scale testing and public demonstration of three technologies of HVDC circuit breakers up to 350 kV. Since he obtained his Ph.D. degree in 1987, he has served as a professor at Eindhoven University, Netherlands, and Xi’an Jiaotong University, China. Smeets has authored over 300 papers, been editor of three books, and has received 10 international awards.
IEEE PES Prize Paper Award

“Optimizing DER Participation in Inertial and Primary-Frequency Response”

IEEE Transactions on Power Systems,
Vol. 33, No. 5, pp. 5194-5205, September 2018

Authors: Swaroop Srinivasrao Guggilam, Changhong Zhao,
Emiliano Dall’Anese, Christine Chen and Sairaj V. Dhople

Swaroop S. Guggilam received a bachelor’s degree in Electrical Engineering in 2013 from the Veermata Jijabai Technological Institute, Mumbai, Maharashtra, India, and M.S. and Ph.D. degrees in Electrical Engineering in 2014 and 2019, respectively, from the University of Minnesota Twin-Cities, Minneapolis, MN, USA. His research interests include power system modeling, optimization, transmission planning, primary frequency response, dynamic reserves, analysis, and control for increasing renewable integration. He received the Best Paper Award from IEEE Transactions on Power Systems in 2021, and the 2021 IEEE PES Prize Paper Award. He is currently working as a senior engineer in the Grid Operations and Planning Group at Electric Power Research Institute, Knoxville, TN, USA.

Changhong Zhao received B. Eng. in Automation from Tsinghua University in 2010, and M.S. and Ph.D. degrees in Electrical Engineering from Caltech in 2012 and 2016, respectively. From 2016 to 2019, he worked at the US National Renewable Energy Laboratory as a staff researcher. In 2019, he joined the Department of Information Engineering at the Chinese University of Hong Kong (CUHK), as an assistant professor. Zhao received the 2020 Early Career Award from Hong Kong Research Grants Council, the 2021 IEEE Transactions on Power Systems Best Paper Award, and Ph.D. thesis prizes from Caltech Department of Electrical Engineering and Division of Engineering and Applied Science.
EMILIANO DALL’ANELSE is an assistant professor in the Department of Electrical, Computer, and Energy Engineering at the University of Colorado Boulder, where he is also an affiliate faculty member with the Department of Applied Mathematics. He received the Ph.D. in Information Engineering from the Department of Information Engineering, University of Padova, Italy, in 2011. From January 2011 to November 2014, he was a postdoctoral associate at the Department of Electrical and Computer Engineering of the University of Minnesota, and from December 2014 to July 2018 he was a senior researcher at the National Renewable Energy Laboratory. His research interests span the areas of optimization, control, and learning, with applications in power and energy systems, (electrified) transportation networks, and healthcare. He received the National Science Foundation CAREER Award in 2020. He received three Best Paper Awards from the IEEE PES Society and the 2021 IEEE PES Prize Paper Award.

CHRISTINE CHEN received the B.A.Sc. degree in engineering science from the University of Toronto, Toronto, ON, Canada, in 2009, and M.S. and Ph.D. degrees in Electrical Engineering from the University of Illinois at Urbana-Champaign, Urbana, IL, USA, in 2011 and 2014, respectively. She is currently an associate professor within the Department of Electrical and Computer Engineering, The University of British Columbia, Vancouver, BC, Canada, where she is affiliated with the Electric Power and Energy Systems Group. Her research interests include power system analysis, monitoring, and control. Chen is a Best Paper Award recipient from the IEEE Transactions on Energy Conversion in 2018 and from the IEEE Transactions on Power Systems in 2020. She also co-authored the 2021 IEEE PES Prize Paper.

SAIRAJ V. DHOPLE received B.S., M.S., and Ph.D. degrees in Electrical and Computer Engineering from the University of Illinois at Urbana-Champaign, Urbana, IL, USA, in 2007, 2009, and 2012, respectively. He is currently an associate professor with the Department of Electrical and Computer Engineering at the University of Minnesota, Minneapolis, MN, USA. His research interests include modeling, analysis, and control of power electronics and power systems with a focus on renewable integration. He was the recipient of the National Science Foundation CAREER Award in 2015 and the Outstanding Young Engineer Award from the IEEE Power and Energy Society in 2019.
IEEE PES Working Group Recognition Award
Outstanding Standard or Guide

Each year, every Technical Committee of the Technical Council is entitled and encouraged to award one working group with the IEEE PES Technical Committee Working Group Recognition Award. Each committee is also encouraged to nominate their working groups for one of the Society-level Working Group Awards, IEEE PES Working Group Recognition Awards Outstanding Standard or Guide or Technical Report. Two working groups are chosen out of all the nominations for these Society-level Awards and are recognized at the IEEE PES General Meeting. The officers are given a plaque and mounted certificates are given to members. This award is funded by the PES Award Endowment Fund.

IEEE C37.246, Guide for Protection Systems of Transmission-to-Generation Interconnections

**WG Chair:** Alla Deronja

**WG Vice Chair:** Keith Houser

**Working Group Members:** Abu Bapary, Jeffrey Barsch, Randall Cunico, Will English, Dominick Fontana, Dale Fredrickson, Nathan Gulczynski, Mike Jensen, Gerald Johnson, Yuan Liao, Heather Malson, Rene Midence, Dean Miller, John Miller, Adi Mulawarman, Mukesh Nagpal, James O’Brien, Mahendra Patel, Manish Patel, Neftaly Torres, Ian Tualla, Joe Uchiyama, Joe Uchiyama, Joseph Valenzuela, Solveig Ward, and Richard Young
IEEE PES Working Group Recognition Award
Outstanding Standard or Guide

**JIM McDOWALL** has worked in the battery industry since 1977 and is currently in the position of Senior Technical Advisor with Saft. Involved in the energy storage market since 1998, Jim was a Director of the Energy Storage Association for 14 years and is a past Chair of the organization. Jim is an IEEE Fellow and is Standards Coordinator and Past Chair of the IEEE Energy Storage and Stationary Battery Committee, and Chair of three of its working groups.

**MIKE NISPEL** has been in the industrial battery field for over 30 years, and is currently Director of Specialty Products and Services for Philadelphia Scientific. His experience has focused on industrial lead-acid and lithium batteries, as well as the related application fields of grid storage, renewables and battery monitoring. He is currently chair of the Energy Storage Subcommittee of IEEE Energy Storage and Stationary Battery Committee (ESSB), was active in the renewable energy battery working groups of SCC21, and is on the Battecon Technical Committee.
IEEE PES Working Group Recognition Award
Outstanding Technical Report

PES-TR64, Impact of Alternate Gases on Existing
IEEE Standards

Prepared by the IEEE PES Switchgear Committee
Published May 2018

WG Chair: Nenad Uzelac

NENAD UZELAC graduated from the School of Electrical Engineering in Belgrade, Serbia, in 1995, with a major in electrical power engineering and completed Master of Science in Product Development at Northwestern University, Evanston, USA, in 2004. In 1999, he joined G&W Electric Company as an R&D engineer, and in 2005, he became R&D manager for developing new MV switchgear including reclosers and fault interrupters. Starting in 2015, he became responsible for G&W Global Research, tasked with developing new technologies. His research interests include AC and DC switching, materials and insulation technologies, condition monitoring and diagnostics, sensors, and arc fault studies. He was a convener of CIGRE A3.24 WG on “Tools for simulation of internal arc on MV and HV switchgear” and CIGRE A3.32 WG “Non-intrusive methods for condition assessment of distribution and transmission switchgear.” Currently, he is a chair of CIGRE A3 study committee on T&D Equipment. He is also a senior member of IEEE and a chair of the IEEE Switchgear Technology and Innovation subcommittee.
IEEE PES Outstanding Chapter Award
Small & Large Chapter Categories

This award was created to recognize a PES Chapter for achieving excellence in providing the best set of overall programs and activities for its members. Each year, the IEEE Power & Energy Society Outstanding Chapter Award is given to the chapters that are judged to provide the greatest overall contribution and service to its members in the following categories:

- Technical Activities
- Societal Activities
- Membership Advancement, Fellow Nominations, and Awards
- Enlistment of New PES Members

The award consists of a custom-prepared IEEE PES Outstanding Chapter Award banner, complete with the name of the winning chapter. This banner is useful and suitable for display at any chapter meeting, as well as at any local membership drive. In addition, the winning chapter officers are presented with handsomely prepared plaques in recognition of their outstanding leadership.

The OCA is split into two separate but equal competitions so that similar-sized chapters will compete only against each other:

- Outstanding Large Chapter Award (>100 members)
- Outstanding Small Chapter Award (<100 members)

All competition rules for the OCA are identical. Thus, both the winning large chapter and the winning small chapter receive their own individual OCA banner and plaques.

In recognition of all the hard work put forth by all chapters, large or small, winners or runners-up, will be given each year:

- Winning Chapter = $1,000 USD each
- Runner-Up Chapter = $250 USD each
The IEEE PES Pune Chapter is recognized as the recipient of the 2020 Outstanding Small Chapter Award for its outstanding performance for the accomplishments completed in 2020. The achievements are recognized under the leadership of Chapter Chair, Dr. Surekha Deshmukh, and the Chapter Executive Committee (ExCom). The executive summary from the chapter’s OCA submittal is below, with details on the chapter’s activities.

This chapter has conducted 31 activities and 10 administrative meetings from January 2020 to December 2020 in partnership with industries as PRAJ, SAS Powertech Pvt Ltd, Eaton Tech Innovation Center, SPEL Inventing Green Solution Pvt Ltd, Strom Energie Pvt Ltd, Elliot Systems, TCS, Utility as MSEDCL, AICTE, IEEE sections in India, Bangladesh, PES India Chapter Council and GIEEE Bangalore, and the National Safety Council of India.

- Hosted a Distinguished Lecturer Event with 122 audience members
- Seven industry focused events including the INDUSTRY 4.0 Workshop and a two-day workshop on AI
- Three academic events including an energy management webinar
- Four membership development events with a focus on the value of professional organizations
- Six student development events including an event with 92 colleges
- Seven professional events including solar systems and electric vehicle advancements
- Three social events including participation in Pune Auto Expo 2020
- Events totaled over 5000 participants

**RUNNER-UP IN THIS CATEGORY:**

Queensland (R10)
IEEE PES Outstanding Chapter Award
Large Chapter Category

MALAYSIA CHAPTER
HAZLIE BIN MOKHLIS, CHAIR

The Malaysia Chapter is recognized as the recipient of the 2020 Outstanding Large Chapter Award for its outstanding performance for the accomplishments completed in 2020. The achievements are recognized under the leadership of Chapter Chair, Hazlie Bin Mokhlis, and the Chapter Executive Committee (ExCom). The executive summary from the chapter’s OCA submittal is below, with details on the chapter’s activities.

IEEE Power & Energy Society Malaysia Chapter had completed 49 activities in the year 2020. Although the world has been hit by the COVID-19 pandemic, this did not weaken our spirit to continue to run programs for the benefit of all members. Therefore, most of the programs were conducted virtually. IEEE PES Malaysia has been awarded the runners up for the IEEE R10 Educational Activities Committee (EAC) Challenge University Category on the project “Electrical Power System Simulation Competition 2020 (EPSSCom).” On top of that, IEEE PES Malaysia had also received recognition from IEEE Malaysia Section as the first runner up for the 2019 website competition and third prize winner for the Stay-at-Home video in 2020.

- Sixteen technical talks including off-grid PV system design and electric vehicle charging
- Eight educational events including Matlab for beginners and skills to become a professional engineer
- Three social events
- Six professional events including the IEEE Leadership Talk 2020
- Two Women in Power events including COVID-19 New Normal and Work-Life Integration
- Conference involvement on ICSGCE 2020 and PECon 2020
- Six membership drives
- Six administration activities
- Awarded Outstanding Engineers Award, Volunteer Award, Student Award, and many advancements to senior membership

RUNNER-UP IN THIS CATEGORY:

Germany (R8)
The goal of the Initiative is to get more undergraduate students involved in the Power Industry. It provides scholarships, mentoring opportunities and real-world experiences to undergraduate EE students interested in power and energy engineering careers in Canada, India, Italy, Puerto Rico and the United States.

"Thank you for your assistance with finding a job during this unprecedented time. I’m excited to let you know that I’ve accepted an offer and will be working in an electric generation group. I never expected to have multiple offers to choose from upon graduation, and especially not during a global pandemic. Because of the IEEE PES Scholarship I was able to finish my degree, and also got a hopefully life-long career at a great company."

-Abigail, Kettering University (June 2020)

Support from industry is a key component for success of the program.

We wish to thank our financial supporters:

Presidential Level - S&C Electric and Schweitzer Engineering Laboratories
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Gold Level - Burns McDonnell and ShivKrupa
Silver Level - American Transmission Corporation, ComEd, Omicron Energy and Southern Company

♦ Program established in 2011
♦ Awarded 1,809 scholarships to 1,061 individuals attending 206 universities in the USA, Canada, & Puerto Rico
♦ 500+ PES Scholars have reported earning full-time jobs with 75% working in the power industry.

To make your donation visit https://www.ieeefoundation.org/Donate_PES_Scholarship
Or for more information on the Scholarship Plus Initiative visit https://www.ee-scholarship.org/
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Fushuan Wen  
Wenchuan Wu  
Zheng Xu  
Hamidreza Zareipour  
Jizhong Zhu
We Make a Difference Reliable and Sustainable Energy for Humanity

Galapagos Island Project - Project funding to Beyond Chacay Foundation, located in the Galapagos Islands, made possible the installation of a solar powered intranet, enabling students and teachers alike access to a network of computers and computer development lab and educational curricula. A fully functioning Intranet connects computer labs at 17 of the 19 schools on the two most populated of the Enchanted Islands and provides much needed digital resources for teachers and students use.

Photo Credit: IEEE Ecuador Section

Shabyis Nigeria Limited - Chief Tunde and the team from Shabyis Limited Nigeria alongside members of the Nigeria Institution of Electrical and Electronics Engineers visiting the installed solar microgrid in Lajolo. Photo Credit: SNL Staff
Global Himalayan Expedition - Paras Loomba, GHE Founder, GHE Entrepreneur and villagers of the electrified community in Kargil, India.

Photo Credit: GHE Staff

Green Village Electricity - Photo of installed solar microgrid to power the adjacent village, Shimankar, Nigeria.

Photo Credit: GVE Team
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THANK YOU FOR YOUR SUPPORT!

www.ieeefoundation.org/PatrickRyan
We hope to see you next year in Denver, Colorado for the 2022 IEEE Power 
& Energy Society General Meeting Award Celebrations!

Denver, Colorado | July 17–21, 2022

NOMINATIONS FOR 2022 PES AWARDS OPEN ON 1 OCTOBER 2021.
WWW.IEEE-PES.ORG/PESAWARDS