

PHILIP W. T. PONG

Ph.D. (Cambridge), FIET, FInstP, FEI, FIMMM, FHKIE, CEng, CPhys, Chartered Energy Engineer, R.P.E.

Email: philip.pong@njit.edu Website: web.njit.edu/~wp24
Tel: +1 973-596-3533
Address: ECEC 327, Department of Electrical and Computer Engineering,
New Jersey Institute of Technology, Newark, NJ 07102, United States

- **Associate Professor, New Jersey Institute of Technology, United States**
- **Top 0.5% Scholar in “Sensor” by ScholarGPS (2024)**
- **Fellow, The Institution of Engineering and Technology (FIET) (2018)**
- **Fellow, The Institute of Physics (FInstP) (2021)**
- **Fellow, The Energy Institute (FEI) (2019)**
- **Fellow, The Institute of Materials, Minerals and Mining (FIMMM) (2017)**
- **Fellow, The Hong Kong Institution of Engineers (FHKIE) (2021)**
- **Senior Member, IEEE (2012)**
- **Chartered Engineer (CEng) (2014)**
- **Chartered Physicist (CPhys) (2014)**
- **Chartered Energy Engineer (2014)**
- **>160 SCI journal publications, >200 conference publications, >4400 citations, h-index=36, 7 patents (7 granted, 1 PCT published)**
- **Over 100 invited talks including 23 plenary speeches and 31 keynote speeches**
- **Graduated 18 PhD and 6 master students (3 by research). Supervising 4 PhD students.**
- **ACM Distinguished Speaker (2019 – 2022)**
- **Young Engineer of the Year (awarded by Hong Kong Institution of Engineers in 2016)**
- **Research papers selected as journal cover page, best paper, best poster**
- **Ph.D. (University of Cambridge, full Cambridge scholarship)**
- **Registered Professional Engineer (Electrical, Electronics, Energy) (R.P.E.) (Hong Kong)**

Research interest: contactless sensing, smart grid and renewable energy, grid integration with wind power, condition monitoring

Education

2002-2005	Nanoscience Centre, University of Cambridge, United Kingdom (full scholarship from Cambridge)	Ph.D. in Engineering
1999-2002	The University of Hong Kong, Hong Kong First Class Honours (1 st in Dean’s Honours List)	Bachelor in Electrical and Electronic Engineering

Research and Teaching Experience

Jan 2021 – Present	Department of Electrical and Computer Engineering, New Jersey Institute of Technology, United States	Associate Professor
Jun 2018 – Nov 2019	Department of Electrical Engineering, Princeton University, United States	Visiting Fellow
Jul 2014 – Dec 2020	Department of Electrical and Electronic Engineering, University of Hong Kong, Hong Kong	Associate Professor
Aug 2008 – Jun 2014	Department of Electrical and Electronic Engineering, University of Hong Kong, Hong Kong	Assistant Professor
Nov 2005 – Jul 2008	Magnetic Materials Group, National Institute of Standards and Technology (NIST), United States	Postdoctoral Researcher
Fall 2006	Department of Electrical and Computer Engineering, University of Maryland College Park	Visiting Lecturer

Major External Grants

NSF	PI	1 Aug 2025	US\$399,000	On-going	31 Jul 2026
“National Science Foundation Industry-University Cooperative Research Centers Program (IUCRC) Planning Phase - The Center for Grid Enhancing Technologies for Future Energy Systems Integration and Transmission (GET-FIT)” (NSF#2515138)					
New Jersey Economic Development Authority	PI	1 Nov 2023	US\$399,000	On-going	31 Oct 2026
“Professional Offshore Wind Energy Certificates (“POWERCERTS”) Program”					
NSF	Co-PI	1 Oct 2023	US\$250,000	On-going	30 Sep 2026
“ASCENT: From sensors to multiscale digital twin to autonomous operation of resilient electric power grids” (NSF# 2328241)					
New Jersey Economic Development Authority	PI	1 Aug 2022	US\$125,000	On-going	31 Mar 2024
“New Jersey Offshore Wind Training and Research Institute (NJOWTRI): Certificate Training Course, Conference, and Research Facility” (Award# 00089196-NJOWTRI)					
GRF, RGC (Hong Kong)	PI	1 Nov 2017	HK\$600,000	On-going	31 Oct 2020
“Fault classification of distribution power cables by detecting decaying DC components in fault currents with magnetic sensing: a robust non-invasive technique without precalibration” (RGC Project No. 17204617)					
ITF (Tier 3) (Hong Kong)	PI	1 Jul 2015	HK\$1,393,800	Completed	31 Dec 2016
“Electric vehicle (EV) sensor parts: development of an innovative multifunctional high-speed rotation, temperature and current sensor for monitoring critical components in EVs” (ITS/214/14)					
ITF (Tier 3) (Hong Kong)	PI	1 Nov 2013	HK\$997,050	Completed	30 Oct 2015
“Development of a Point-Of-Care Early Liver Cancer Detector Using Magnetic Immunoassay (MIA)” (ITS/104/13)					
GRF, RGC (Hong Kong)	PI	12 Oct 2011	HK\$473,333	Completed	11 Apr 2014
“Low-frequency noise study on junction geometry of magnetic tunnel junction (MTJ) sensors for enhancing sensitivity” (RGC Project No. HKU704911P)					
ITF (Tier 3) (Hong Kong)	PI	14 Nov 2012	HK\$874,000	Completed	13 Nov 2014
“Operation-state monitoring and energization-status identification of underground electricity cables with magnetoresistive sensors” (ITS/112/12)					

Four Most Important Recent Publications

A. Swain, C. Liu, Philip W. T. Pong, “Modeling of Wind Turbine Drive Trains for Finite Element Analysis through Co-Simulation”, IEEE Transactions on Magnetics, vol. 59, 7401505 (2023)

A. Kootala, A. Mousa, Philip W. T. Pong, “Drone Endangering Energy Critical Infrastructure, and How We Can Deal with It”, Energies, vol. 16, 5521 (2023)

K. Zhu, Philip W. T. Pong, “Fault Classification of Power Distribution Cables by Detecting Decaying DC Components with Magnetic Sensing”, IEEE Transactions on Instrumentation and Measurement, vol. 69, 2016 (2020)

Zheng et al., “Magnetoresistive Sensor Development Roadmap (Non-Recording Applications)”, IEEE Transactions on Magnetics, vol. 55, 0800130 (2019)

Patents

U. S. Patent Number: 10852359: “Apparatus and method for DC-component-based fault classification of three-phase distribution power cables with magnetic sensing”, granted Dec 1 2020

China Patent Application 201811479765.2: “Apparatus and method for fault classification of three-phase distribution power cables”, filed December 2018. Granted Dec 5 2022

China Patent Number: ZL201711246907.6: “A multifunctional sensor protocol for measuring rotation speed, temperature and current in electric vehicles”, granted Aug 12 2022

PCT Publication Number: WO/2021/048596: “Anomaly Detection in Energy Systems”, published March 18 2021

U. S. Patent Application No. 17/753,766: “Anomaly Detection in Energy Systems”, granted Feb 11 2025

European Patent Application EP4005047B1: “Anomaly Detection in Energy Systems”, granted May 1 2024

United Kingdom Patent Application EP19945149.3: “Anomaly Detection in Energy Systems”, granted May 1 2024

Germany Patent Application 602019051772.6: “Anomaly Detection in Energy Systems”, granted May 1 2024

Administrative Positions at NJIT (since 2021)

MS Power and Energy Systems	– Program Advisor
Grad Cert Wind Power Management	– Program Advisor
Grad Cert Wind Power System Operation & Maintenance	– Program Advisor
Grad Cert Power Systems Engineering	– Program Advisor
Wind Power Academy	– Co-Director

Administrative Experiences at The University of Hong Kong (2008 – 2020)

University	– Discontinuation Committee
Faculty	– Engineering Admission Committee
Faculty	– Director of Summer Undergraduate Internship Program in Taiwan
Faculty	– High School Ambassador for Engineering
Department	– MSc Program Co-Director
Department	– MSc and Undergraduate Admission
Department	– Summer Camp Coordinator
Department	– EE Program Committee
Department	– Minor Options and Double Degree Coordinator
Department	– Safety Committee
Department	– Research Postgraduate Student Review Panel
Department	– Staff-Student Consultative Committee

Editorship of SCI Journals

2022 – Present	<i>IEEE Internet of Things Journal</i> – Associate Editor
2021 – Present	<i>IEEE Access</i> – Associate Editor
2021 – Present	<i>Energies</i> – Associate Editor
2007 – Present	<i>International Journal of Modern Physics B</i> – Editorial Board Member
2007 – Present	<i>Modern Physics Letters B</i> – Editorial Board Member
2016 – Present	<i>IEEE Magnetics Letters</i> – Editorial Review Board
2016 – 2024	<i>IEEE Transactions on Magnetics</i> – Guest Editor (Intermag Conference Proceedings)
2024 – Present	<i>IEEE Transactions on Magnetics</i> – Associate Editor
2023 – Present	<i>IEEE Journal of Selected Areas in Sensors (JSAS)</i> – Editor

Editorship of non-SCI Journals

2016 – Present	<i>International Journal of Smart Grid and Clean Energy</i> – Editorial Board Member
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External scientific grant reviewer

May 2021	National Science Foundation (NSF) – Electronics, Photonics and Magnetic Devices (EMPD) (Panelist)
2020	Romania – Victor Babes University of Medicine and Pharmacy, Timisoara
2017	Singapore – Science & Engineering Research Council, Agency for Science, Technology and Research (A*STAR)
2015	Singapore – Nanyang Technological University

Selected Services to Professional Organizations and Societies (past three years):

Mar 2022 – Present	IEEE North Jersey Section Joint Chapter – Magnetics	Founding Chair
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	Society / Sensors Council / Ultrasonics, Ferroelectrics, and Frequency Control Society	
2021 – Present	IEEE Technical Activities Board – Committee on Standards	Member
Jan 2015 – Dec 2021	IEEE Magnetics Society – Administrative Committee	Publicity Chair
2022 – Present	IEEE Magnetics Society – Standards Committee	Chair
2017 – 2018	IEEE Magnetics Society – Achievement Award Subcommittee	Member
Jan 2015 – Dec 2020	IEEE Magnetics Society - Hong Kong Chapter	Treasurer
Apr 2014 – Dec 2018	IEEE Magnetics Society – Technical Committee, Taskforce on magnetoresistive sensor roadmap development (non-recording applications)	Leader
Jan 2009 – Dec 2014	IEEE Magnetics Society - Hong Kong Chapter	Founding Chair
Feb 2009 – Present	IEEE Magnetics Society - Technical Committee	Member
Aug 2017 – Present	Hong Kong Institution of Engineers – Education & Examinations Committee	Appointed Member
Feb 2017 – Present	Hong Kong Institution of Engineers - Electronics Disciplinary Advisory Panel	Appointed Member

Selected Services in International Conferences:

Nov 2026	4 th International Conference on Big Data, Computational Intelligence and Applications, Huanggang, China, 6 – 8 Nov	Academic Committee
Oct 2026	2025 International Conference on Power Engineering and Electrical Technology, Osaka, Japan, 28 – 30 Oct	Program Co-Chair
Aug 2026	7 th International Conference on Advanced in Electrical Engineering and Computer Applications (AEECA 2026), Dalian, China, 21-23 Aug	International Scientific Committee
Aug 2026	2026 6 th Power System and Green Energy Conference (PSGEC 2026), Shanghai, China, 21-23 Aug	Program Committee Co-Chair
Aug 2026	2026 8 th International Conference on Mechatronics Systems and Control Engineering (ICMSCE 2026), Tokyo, Japan, 18-20 Aug	Steering Chair, Technical Committee
May 2026	2026 9 th International Conference on Electrical Engineering and Green Energy, Yangzhou, China, 15-17 May	Conference Co-Chair
Apr 2026	2026 IEEE 2 nd International Symposium on the Application of Artificial Intelligence in Electrical Engineering (AAIEE 2026), Beijing, China, 10-13 Apr	Technical Committee
Dec 2025	International Conference on Power and Energy Engineering, Chengdu, China, 26-28 Dec	Advisory Chair
Dec 2025	New Jersey Future Energy Transmission Conference, Newark, New Jersey, United States, 10 Dec	Conference Co-Chair
Nov 2025	3 rd International Conference on Big Data, Computational Intelligence and Applications, Huanggang, China, 14-16 Nov	Academic Committee
Oct 2025	The 8 th International Conference on Power and Energy	Program Committee

Applications, Shanghai, China, 23-25 Oct

Oct 2025	2025 International Conference on Power Engineering and Electrical Technology, Shiga, Japan, 22 – 24 Oct	Program Co-Chair
Jul 2025	2025 International Conference on Smart Grid and Sustainable Energy, Zhangye, China, 25 – 27 Jul	Conference Co-Chair
Mar 2025	2 nd International Conference on Electronics, Electrical and Control System, Dali, China, 7 – 8 Mar	Technical Committee
Dec 2024	2024 8th International Conference on Power and Energy Engineering (ICPEE 2024), Chengdu, China, 20-22 Dec	Conference Co-Chair
Nov 2024	9th International Conference on Renewable Energy and Conservation (ICREC 2023), Rome, Italy, 22-24 Nov	Conference Program Chair
Nov 2024	2nd Asia Conference on Power, Energy Engineering and Computer Technology (PEECT 2024), Kuala Lumpur, Malaysia, 6-8 Nov	Conference Co-Chair
Oct 2024	7 th International Conference on Power and Energy Applications (ICPEA 2024), Taiyuan, China, 18-20 Oct	Program Co-Chair
Oct 2024	North American Wind Energy Academy (NAWEA) / WindTech 2024 Conference, New Brunswick, New Jersey, USA	Local Organizing Committee
May 2024	IEEE International Magnetics Conference, Rio de Janeiro, Brazil	Program Committee (Team Lead)
May 2024	IEEE International Magnetics Conference, Rio de Janeiro, Brazil	Publication Committee
Dec 2023	New Jersey Wind Week	Event Director
Nov 2023	8th International Conference on Renewable Energy and Conservation (ICREC 2023), Rome, Italy, 10-12 Nov	Conference Program Chair
May 2023	IEEE International Magnetics Conference, Sendai, Japan	Publication Committee
Dec 2022	2022 International Conference on Frontiers of Energy and Environment Engineering, Beihai, China	Program Chair, Editor-in-Chief
Nov 2022	6 th International Conference on Power and Energy Engineering, Shanghai, China	Program Co-Chair
Nov 2022	5 th International Conference on Power and Energy Applications, Guangzhou, China	Program Co-Chair
Nov 2022	2 nd International Conference on Smart City and Green Energy, Hong Kong	Program Chair
Jan 2022	Joint MMM-Intermag Conference, New Orleans, United States	Program Committee (Team Lead)
Nov 2021	2021 International Conference on Smart City and Green Energy (Virtual)	Program Chair
Nov 2021	2021 6 th Asia Conference on Environment and Sustainable Development (Virtual)	Program Chair

April 2021	SMARTGREENS 2021 – 10 th International Conference on Smart Cities and Green ICT Systems (Virtual)	International Program Committee
April 2021	IEEE International Magnetics Conference (Virtual), Lyon, France	Publicity Chair
May 2020	IEEE International Magnetics Conference, Montreal, Canada	Publicity Chair
May 2020	SMARTGREENS 2020 – 9 th International Conference on Smart Cities and Green ICT Systems, Prague, Czech Republic	International Program Committee
Jan 2020	2 nd International Conference on Smart Grid and Green Energy, Bali, Indonesia	Program Chair
Dec 2019	IEEE Power & Energy Society (PES) Asia-Pacific Power & Energy Engineering Conference APPEEC 2019, Hong Kong	Technical Program Committee
Dec 2019	3 rd Asia Conference on Machine Learning and Computing, Hong Kong	Local Chair
Nov 2019	Annual Conference on Magnetism and Magnetic Materials, Las Vegas, USA	Publicity Chair
Jan 2019	Joint MMM-Intermag Conference, Washington DC, United States	Publicity Chair
Nov 2018	3 rd International Conference on New Energy and Applications, Singapore	Technical Program Chair
Oct 2018	5 th International Conference on Advances in Electronics Engineering, Kuala Lumpur, Malaysia	Technical Program Chair
Jul 2018	International Conference on Magnetism (ICM), San Francisco, United States	Publicity Chair, Program Committee
May 2018	International Conference on Bioenergy and Clean Energy	Program Chair
May 2018	IEEE International Magnetics Conference, Singapore	Publicity Chair, Program Committee
Mar 2018	SMARTGREENS 2018 – 7 th International Conference on Smart Cities and Green ICT Systems, Funchal, Portugal	Program Committee
Nov 2017	2 nd International Conference on New Energy and Applications (ICNEA 2017), Tokyo, Japan	Technical Program Chair
Oct 2017	4 th International Conference on Advances in Electronics Engineering (ICAEE 2017), Hong Kong	Technical Program Chair
Oct 2017	9 th International Conference on Software Technology and Engineering (ICSTE 2017), Hong Kong	Technical Program Chair
Nov 2017	62 nd Annual Conference on Magnetism and Magnetic Materials, Pittsburgh, USA	Publicity Chair
Apr 2017	IEEE International Magnetics Conference, Dublin, Ireland	Program Committee
Apr 2017	SMARTGREENS 2017 – 6 th International Conference on Smart Cities and Green ICT Systems, Porto, Portugal	Program Committee

Selected Public Services in Hong Kong (past three years):

May 2018 – May 2020	Security Bureau – Civil Celebrant of Marriages Appointment Appeal Board: Deputy Chairperson
Sep 2016 – Aug 2018	Office of the Communications Authority – Telecommunications Regulatory Affairs Advisory Committee: Member
Jun 2016 – May 2018	Security Bureau – Civil Celebrant of Marriages Appointment Appeal Board: Member
Dec 2015 – Nov 2018, Dec 2018 – Nov 2021	Planning and Lands Branch Development Bureau Government Secretariat – Appeal Tribunal Panel (Section 45 of the Buildings Ordinance): Member
Jan 2013 – Jan 2015, Jan 2015 – Jan 2017, Jan 2017 – Jan 2019	Development Bureau – Appeal Board Panel (under Construction Workers Registration Ordinance): Member
Apr 2013 – Mar 2015	Education Bureau – Electrical and Mechanical Services Training Board (Vocational Training Council): Member
Apr 2013 – Apr 2015, Apr 2015 – Mar 2017	Education Bureau – Committee on Technologist Training (Vocational Training Council): Member