PHILIP W. T. PONG *Ph.D., FIET, FIMMM, FEI, FHKIE, FNS, CEng, CPhys,*

Chartered Energy Engineer, Registered Professional Engineer, SMIEEE

Journal Publications

2025 Dec	W. Miao, K. Duan, Q. Chen, F. Wang, X. Sun, Y. Zhang, K. H. Lam, Philip. W. T. Pong, "Contactless Fault Diagnosis Technique by Magnetic Field Image Recognition for Lithium Battery", IEEE Sensors (accepted)
2025 Jul	R. Raj, A. Elmouatamid, A. Swain, Philip W. T. Pong, "Critical Review of Hybrid Modular Multilevel Converters for HVDC Transmission in Offshore Wind Energy", Energy Reports (accepted)
2025 Jul	A. B. Javadi, Philip W. T. Pong, "A review on symbolic regression in power systems: Methods, applications, and future directions", Renewable and Sustainable Energy Reviews, vol. 224, 116075 (2025)
2025 Mar	A. Swain, I. Hossain, C. Liu, Philip W.T. Pong, "Modeling Non-Linear and Non-Stationary Magnetic Signals: An Enhanced Signal Processing Strategy for Wind Time Series Analysis", IEEE Transactions on Magnetics (accepted)
2024 Jun	Qi Xu, Philip W. T. Pong, K. T. Chau, Chunhua Liu, "Contactless Current Sensing with Bandwidth Enhancement for High-Frequency Power Converters", IEEE Journal of Emerging and Selected Topics in Power Electronics (accepted)
2024 Jun	Jingyi Liu, Chi-Kwan Lee, Philip W. T. Pong, "Anti-Interference Current Sensing with Enhanced Sensitivity Based on Magnetoresistive Sensors", IEEE Transactions on Instrumentation and Measurement (accepted)
2024 May	Jingyi Liu, Chi-Kwan Lee, Philip W. T. Pong, "A Guided Wireless Electric Vehicle Charging Strategy Based on In-Plane Magnetic Field", IEEE Sensors, vol. 24, 22916 (2024)
2023 Sep	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)
2023 Aug	Jia Luo, Jia Hao Guo, Yun He Hou, Jun Lin Wang, Yong Bing Xu, Yan Zhou, Philip Wing Tat Pong, and Guo Ping Zhao, "Manipulating Skyrmion Motion on a Nanotrack with Varied Material Parameters and Tilted Spin Currents", Chinese Physics Letters, vol. 40, 097501 (2023)
2023 Jul	J. Liu, C. K. Lee, Philip W. T. Pong, "Online Short-Circuit Fault Diagnosis in Three-Core Power Distribution Cable Based on Magnetic Pattern", IEEE Sensors, vol. 23, 21832 (2023)
2023 Jul	J. Liu, C. K. Lee, Philip W. T. Pong, "Enhanced Direct-Current Bias Detection Method Based on AC-Modulated Tunneling Magnetoresistive Sensor for Transformer-Based Renewable Energy Systems", IEEE Transactions on Magnetics, vol. 59, 4400309 (2023)
2023 Jul	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)
2023 Jun	A. Elmouatamid, B. Fricke, J. Sun, Philip W. T. Pong, "Air Conditioning Systems Fault Detection and Diagnosis Based Sensing and Data-Driven Approaches", Energies, vol. 16, 4721 (2023)
2023 May	A. Elmouatamid, M. Chowdhury, M. Netto, Philip W. T. Pong, "Economic feasibility study of stand-alone community microgrid in 37 cities of the USA", HKIE Transactions (accepted)

2022 Dec Y. Hou, S. Yuan, G. Zhu, B. You, Y. Xu, W. Jiang, H. C. Shum, Philip W. T. Pong, Chia-Hung Chen, and L. Wang, "Photonic Crystal-Integrated Optoelectronic Devices with Naked-Eye Visualization and Digital Readout for High-Resolution Detection of Ultratrace Analytes", Advanced Materials, vol. 35, 2209004 (2022)

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Conference Publications (full papers, digests, extended abstracts, abstracts)

2026 Feb

2025 Dec

2025 Jul R. Raj, Philip W. T. Pong, "Digital Twin Based on Neural Network for a Grid Connected Modular Multilevel Converters for HVDC Transmission", 2025 IEEE North-East India International Energy Conversion Conference and Exhibition (NE-IECCE), 4 – 6 July 2025, Silchar, India (Full paper)

2025 Jul "Grid-Forming Control of Converter Infinite Bus System: Modeling by Data-Driven Methods", IEEE Power & Energy Society General Meeting 2025, 27-31 July, Austin, Texas, USA (full paper)

2025 Jan A. Swain, Chunhua Liu, Philip W. T. Pong, "Modeling Non-Linear and Non-Stationary Magnetic Signals: An Enhanced Signal Processing Strategy for Wind Time Series Analysis", 2025 Joint MMM-Intermag Conference, New Orleans, Louisiana, United States, 13 – 17 Jan 2025, Poster Presentation No. VP16-06

2024 Oct A. Swain, Chunhua Liu, Marcos Netto, Philip W. T. Pong, "A Time-Frequency Analysis Approach for Multi-Class Fault Diagnosis of Wind Turbine Drive Trains", North American Wind Energy Academy (NAWEA) / WindTech Conference, Rutgers – New Brunswick, New Jersey, United States, 28 Oct – 1 Nov 2024, Paper No. 261

2024 Feb R. Kabir, A. Elmouatamid, H. Elkhoukhi, Philip W. T. Pong, "Photovoltaic Power Forecasting Using Neural Networks for Short and Medium-Term Dependencies", Texas Power and Energy Conference (TPEC), College Station, Texas, United Sates, 2024, Paper No. 23 (full paper in IEEE Xplore)

2023 Oct A. Swain, A. Elmouatamid, Philip W. T. Pong, "Magnetic Signature-Based Model Using Machine Learning for Electrical and Mechanical Faults Classification of Wind Turbine Drive Trains", Conference on Innovative Smart Grid Technologies, North America (ISGT NA 2024), Washington DC, United States, 2024, Paper No. 24ISGT0167 (full paper in IEEE Xplore)

2023 May A. Swain, C. Liu, Philip W. T. Pong, "Modeling of Wind Turbine Drive Trains for Finite Element Analysis", IEEE International Magnetics Conference Sendai, Japan, 2023, Paper No. JPB-12

2022 Mar R. Burgess, S. Yadri, K. H. Lam, Philip W. T. Pong, "A Feasibility Study on Building a Stand-Alone Community Microgrid in the United States", 6th International Conference on Green Energy and Applications, Singapore, 2022, Paper No. E1-011

2021 Jun W. Miao, K. H. Lam, Philip W. T. Pong, “Faults Detection of Photovoltaic Systems by Magnetic Sensing for the Power Systems in the Digital Era”, 19th IET Annual Power Symposium, Hong Kong, 2021

2021 Apr S. Yuan, Anderson H. C. Shum, Philip W. T. Pong, "Magnetic Manipulation of Hydrogel Droplets in Culture Media for Biological Applications", IEEE International Conference on Magnetics 2021, Paper No. JH-06

2021 Apr J. Liu, H. Liu, Chi-Kwan Lee, Philip W.T. Pong, "A Wide-Bandwidth Impedance Measurement Technique with Small Perturbation Injection Based on Magnetic Sensing", IEEE International Conference on Magnetics 2021, Paper No. IS-01

2021 Apr J. H. Guo, J. Xia, X. Zhang, Philip W. T. Pong, Y. Zhou, "Dynamic Property of Ferromagnetic Skyrmion in an In-Plane Magnetic Field", IEEE International Conference on Magnetics 2021, Paper No. HP-03

2021 Apr W. Miao, Philip W. T. Pong, “High-Bandwidth Current Sensing Technique Based on Magnetic-Field Sensing Using a Wire Loop and a Differential Amplifier Calibration Circuit”, IEEE International Conference on Magnetics 2021, Paper No. IS-04

2019 Dec K. Zhu, K. H. Lam, Philip W. T. Pong, “Identification and Location for Phase-to-Ground Fault with Magnetic Sensing in Power Distribution Network: Principle and Practical Implementation”, IEEE Power and Energy Society Asia-Pacific Power and Energy Engineering Conference (APPEEC), Macau, 2019, Paper No. 1570574301

2019 Nov X. Zhi, W. Miao, K. H. Lam, Philip W. T. Pong, “Optimal Installation of Photovoltaic Systems Based on Natural Ventilation”, 29th International Photovoltaic Science and Engineering Conference, Xian, China, 2019, Paper No. 10ThP.29/703

2019 Jan Q. Xu, X. Liu, C. Liu, Philip W. T. Pong, “TMR-Sensor-Based Approach for Current Reconstruction, Sag Detection and Inclination Detection for Overhead Transmission System”, 14th Joint MMM-Intermag Conference, Washington DC, USA, 2019, Paper No. GJ-05

2019 Jan X. Liu, C. Liu, Philip W. T. Pong, “Development of a Misalignment-Tolerant Wireless Charging Technique via TMR Sensor Array for Roadway Electric Vehicles”, 14th Joint MMM-Intermag Conference, Washington DC, USA, 2019, Paper No. GJ-02

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2018 Nov **Invited Conference Paper:**

Philip W. T. Pong, “Spintronic Sensors for New Energy and New Applications”, 3rd International Conference on New Energy and Applications, Singapore, page 8

2018 Nov **Invited Conference Paper:**

Philip W. T. Pong, “Advances in Magnetoresistive Sensor Technology for Non-Recording Applications and its Future”, 5th International Conference on Advances in Electronics Engineering, Kuala Lumpur, Malaysia, page 8

2018 Oct **Invited Conference Paper:**

Philip W. T. Pong, “Magnetism Materializing the Trilateral Relationship: Clean Energy-Smart City-Sensing”, IUPAC 14th International Conference on Novel Materials and their Synthesis (NMS-XIV), Guangzhou, China, Paper No. F-KL-04

2018 Oct K. Zhu, X. Liu, Philip W. T. Pong, “On-Site Real-Time Current Monitoring of Three-Phase Three-Core Power Distribution Cables with Magnetic Sensing”, IEEE Sensors 2018, New Delhi, India, Paper No. 1344

2018Oct X. Liu, Philip W. T. Pong, C. Liu, “Dual Measurement of Current and Temperature Using a Single Tunneling Magnetoresistive Sensor”, IEEE Sensors 2018, New Delhi, India, Paper No. 1586

2018 Oct Y. Teng, Philip W. T. Pong, "Fabrication of Fluorescence Graphene Quantum Dots/$CoFe_2O_4$@SiO_2 Nanoparticles and Potential Application for Targeted Drug Delivery and Fluorescence Imaging of Cancer Cells", Nanophotonics and Micro/Nano Optics International Conference, Rome, Italy, Paper No. 401

2018 Oct Y. Teng, Philip W. T. Pong, "Fluorescence Magnetic Immunoassays Using Graphene Quantum Dots and Fe_2O_3@SiO_2 Composite for AFP Detection", Nanophotonics and Micro/Nano Optics International Conference, Rome, Italy, Paper No. 399

2018 Jul Y. Teng, Philip W. T. Pong, "Fabrication of IONP-Hollow Mesoporous Silica Sphere (IONP-HMSs) Composite and Their Drug Delivery Application", International Conference on Advanced Magnetic Materials, Aveiro, Portugal, Paper No. 534

2018 Jul Y. Teng, Philip W. T. Pong, "Folate-Conjugated Au/Fe2O3 Nanoparticles Based Nanoprobe for Targeted Detection of Hela Cell", International Conference on Advanced Magnetic Materials, Aveiro, Portugal, Paper No. 533

2018 Jul Y. Teng, Philip W. T. Pong, "Fe2O3-SiO2 @ poly(acrylamide-co-N,N-diethylacrylamide)/poly (N,N-diethylacrylamide) Interpenetrating Network (IPN) Nanogels", International Conference on Advanced Polymer Materials, Aveiro, Portugal, Paper No. 532

2018 May K. Zhu, Philip W. T. Pong, "Performance Study on Commercial Magnetic Sensors for Measuring Current of Unmanned Aerial Vehicles", IEEE International Instrumentation & Measurement Technology Conference, Houston, Texas, USA, Paper No. 1570446061

2018 May K. Zhu, Philip W. T. Pong, "Fault Classification of Power Distribution Cables by Detecting Decaying DC Components in Fault Currents with Magnetic Sensing", IEEE International Instrumentation & Measurement Technology Conference, Houston, Texas, USA, Paper No. 1570446053

2018 May X. Liu, W. Han, C. Liu, Philip W. T. Pong, "Marker-Free Coil-Misalignment Detection Approach Using TMR Sensor Array for Dynamic Wireless Charging System of Electric Vehicles", IEEE International Magnetics Conference (Intermag 2018), Singapore, Paper No. GV-03

2018 May K. Zhu, Philip W. T. Pong, "Fault Line Identification of HVDC Transmission Line by Frequency Spectrum Correlation Based on Capacitive-Coupling and Magnetic-Field-Sensing", IEEE International Magnetics Conference (Intermag 2018), Singapore, Paper No. CV-09

2018 May W. Miao, X. Liu, K. H. Lam, Philip W. T. Pong, "DC-Arcing Detection by Noise Measurement with Magnetic Sensing by TMR Sensors", IEEE International Magnetics Conference (Intermag 2018), Singapore, Paper No. CV-02

2018 May Y. Teng, Philip W. T. Pong, "One–Pot Synthesis and Surface Modification of Lauric-Acid-Capped $CoFe_2O_4$ Nanoparticles", IEEE International Magnetics Conference (Intermag 2018), Singapore, Paper No. AS-09

2017 Nov **Invited Conference Paper:**

Philip W. T. Pong, "Make Better "Sense" of Smart Grid for Energy Stability and Efficiency via the New Sensing Capabilities offered by Magnetic Sensors", 2nd International Conference on New Energy and Applications, Tokyo, Japan, page 9-10

2017 Nov **Invited Conference Paper:**

Philip W. T. Pong, "Magnetism in the Age of Internet-of-Sensors (IoS)", 18th International Union of Materials Research Societies – International Conference in Asia, Taipei, Taiwan, Paper No. D4-03

2017 Oct **Invited Conference Paper:**

Philip W. T. Pong, "Internet-of-Sensors for Realizing Smart Living: from the Perspective of Magnetism and Magnetic Materials", IUPAC 13th International Conference on Novel Materials and their Synthesis (NMS-XIII), Nanjing, China, Paper No. F-KL-06

2017 Oct **Invited Conference Paper:**

Philip W. T. Pong, “Advancing New Frontiers of Autonomous Internet-of-Things (A-IoT) by Magnetic Sensors”, 4th International Conference on Advances in Electronics Engineering, Hong Kong, page 8-9

2017 Aug C. Zheng, R. Shull, P. J. Chen, Philip W. T. Pong, "Enhancement of 1/f noise due to thermally-activated trapping-detrapping processes in Magnetic Tunnel Junctions (MTJs)", 28th International Conference on Low Temperature Physics, Gothenburg, Sweden, Paper No. P. 472

2017 Jun **Invited Conference Paper:**

Philip W. T. Pong, “Magnetic Sensors and Autonomous Internet of Things (A-IoT)”, 2017 Taiwan Association for Magnetic Technology Annual Meeting and the 29th Magnetic Science and Technology Conference, Taichung, Taiwan, Paper No. OD-04

2017 Apr Y. Teng, Philip W. T. Pong, “Iron Oxide Silica Core-Shell Nanoparticles Conjugated with Bovine Serum Albumin”, IEEE International Magnetics Conference (Intermag 2017), Dublin, Ireland, Paper No. HM-15

2017 Apr X. Li, Y. Zhou, C. Zheng, P. H. Chan, M. Chan, Philip W. T. Pong, “Enhanced Temperature Stability of Spin-Torque Microwave Detector Based on Giant Magnetoresistive Microstripe with Synthetic Ferrimagnetic Free Layer”, IEEE International Magnetics Conference (Intermag 2017), Dublin, Ireland, Paper No. AP-10

2017 Jan X. Li, Y. Zhou, T. Zeng, K.-W. Lin, P. T. Lai, Philip W. T. Pong, “Motion and Switching of Dual-vortex Cores in Elliptical Permalloy Nanodisk Stimulated by a Gaussian Magnetic Field Pulse”, The 10th International Conference on Computational Physics (ICCP10), Macao, Paper No. A4-14

2016 Nov X. Li, Y. Zhou, M. Chan, and Philip W. T. Pong, “Field-angle and DC-bias Dependence of the Spin-torque Diode Effect in Giant-Magnetoresistive Microstripe”, 61st Annual Conference on Magnetism and Magnetic Materials, New Orleans, Louisiana, United States, Paper No. FS-05

2016 Oct **Invited Conference Paper:**

Philip W. T. Pong, C. M. Wong, Y. Du, Y. Teng, C. Zheng, and X. Li, “Smart Healthcare with Magnetic Nanoparticles and Spintronic Sensors”, IUPAC 12th International Conference on Novel Materials and their Synthesis (NMS-XII), Changsha, China, Paper No. KL76-F

2016 Aug X. Li, Y.-C. Chang, W.-C. Yeh, K.-W. Lin, R. D. Desautels, J. van Lierop, and Philip W. T. Pong, “Exchange bias in NiFe/CoO/Fe_2O_3 trilayer”, International Conference of the Asian Union of Magnetics Societies, Tainan, Taiwan, Paper No. PS-08

2016 Aug **Invited Conference Paper:**

Philip W. T. Pong, Y. Du, K. Zhu, and X. Liu, “Development and Application of Spintronic Sensors in Smart and Sustainable Living”, International Conference of the Asian Union of Magnetics Societies, Tainan, Taiwan, Paper No. EB-04

2016 Jun **Invited Conference Paper:**

Philip W. T. Pong, X. Liu, and K. H. Lam, “Spintronic Sensors, Internet of Things, and Smart Living”, Collaborative Conference on 3D & Materials Research (CC3DMR), Incheon, South Korea, page. 327

2016 May Y. Du, Philip W. T. Pong, “A Facile Nanoparticle Immunoassay for Magnetic Immunosensor Using Nanoparticle Protein Corona”, Biosensors 2016: 26th Anniversary World Congress on Biosensors, Gothenburg, Sweden, Paper No. BIOS2016_1156

2016 May Y. Du, Philip W. T. Pong, “A Binding-Releasing Strategy for Magnetic Immunosensors to Eliminate the Nonspecific Binding Signal”, Biosensors 2016: 26th Anniversary World Congress on Biosensors, Gothenburg, Sweden, Paper No. BIOS2016_0922

2016 May X. Li, C. W. Leung, M. S. Chan, and Philip W. T. Pong, “Reduced Magnetic Coercivity and Switching Field in Conetic-Alloy-Based SyntheticFerrimagnetic Nanodots”, 5th International Symposium on Next-Generation Electronics, Hsinchu, Taiwan, Paper No. T2P-1-19

2016 May Y. Teng, C. Jiang, and Philip W. T. Pong, “Amine-Functionalized Fe_2O_3-SiO_2 Core-Shell Nanoparticles with Tunable Sizes”, 5th International Symposium on Next-Generation Electronics, Hsinchu, Taiwan, Paper No. W1P-4-22

2016 May P. H. Chan, X. Li, and Philip W. T. Pong, “Spin Valves with Conetic-Based Synthetic Ferrimagnet Free Layer”, 5th International Symposium on Next-Generation Electronics, Hsinchu, Taiwan, Paper No. W1P-4-28

2016 May Y. Du, and Philip W. T. Pong, “A Linear Slope Analyzing Strategy of GMR Sensor Transfer Curve for the Detection of Superparamagnetic Nanoparticles”, 5th International Symposium on Next-Generation Electronics, Hsinchu, Taiwan, Paper No. W1P-4-27

2016 May Y. Du, and Philip W. T. Pong, “Study of the Multi-Binding Biotinylated Iron Oxide Nanoparticles (biotin-IONPs) as a Promising Versatile Label Material for Magnetic Biodetection Devices”, 5th International Symposium on Next-Generation Electronics, Hsinchu, Taiwan, Paper No. W1P-4-26

2016 May X. Liu, and Philip W. T. Pong, “A New Johnson-Noise-Based Thermometry using Giant Magnetoresistive Sensor”, 5th International Symposium on Next-Generation Electronics, Hsinchu, Taiwan, Paper No. W1P-4-25

2016 May K. Zhu, C. L. Sum, W. K. Lee, and Philip W. T. Pong, “Voltage-Energized Status Identification of Three-Phase Underground Power Cables via Non-Destructive Magnetoresistive Sensor”, 5th International Symposium on Next-Generation Electronics, Hsinchu, Taiwan, Paper No. W1P-4-21

2016 May K. Zhu, and Philip W. T. Pong, “Curved Trapezoidal Magnetic Flux Concentrator Design for Improving Sensitivity of Magnetic Sensor in Multi-Conductor Current Measurement”, 5th International Symposium on Next-Generation Electronics, Hsinchu, Taiwan, Paper No. W1P-4-20

2016 May Z. Y. Yang, C. W. Leung, P. T. Lai, and Philip W. T. Pong, “A Numerical Investigation on Effects of Lateral Si/SiO_2 Interface Traps on Magnetic Sensitivity of Sectorial SD-MAGFET”, 5th International Symposium on Next-Generation Electronics, Hsinchu, Taiwan, Paper No. W1P-4-18

2016 May X. Li, C. W. Leung, M. S. Chan, and Philip W. T. Pong, “Exchange Bias Study of CoFeB/IrMn Antidot and Nanodot Arrays Fabricated by Nanosphere Lithography”, 5th International Symposium on Next-Generation Electronics, Hsinchu, Taiwan, Paper No. W1P-4-19

2016 Jan C. Zheng, X. Li, R. Shull, A. P. Chen, and Philip W. T. Pong, “Kondo Effect in Magnetic Tunnel Junctions with an AlOx Tunnel Barrier”, 13th Joint MMM-Intermag Conference, San Diego, California, USA, 2016, Paper No. BT-14

2016 Jan C. Jiang, C. Zheng, C. W. Leung, and Philip W. T. Pong, “Magnetic Properties of Iron-Oxide-Nanoparticle Superstructures Assembled under In-Plane Magnetic Field”, 13th Joint MMM-Intermag Conference, San Diego, California, USA, 2016, Paper No. BS-03

2015 Nov K. Zhu, W. K. Lee, Philip W. T. Pong, "Non-Contact Electric-Coupling-Based and Magnetic-Field-Sensing-Assisted Technique for Monitoring Voltage of Overhead Power Transmission Lines", IEEE SENSORS, Busan, South Korea, 2015, Paper No. 8-197

2015 Nov K. Zhu, C. L. Sum, W. K. Lee, Philip W. T. Pong, "On-Site Non-Invasive Current Monitoring of Underground Power Cables with a Magnetic Field Sensing Platform at a Substation", IEEE SENSORS, Busan, South Korea, 2015, Paper No. 8-210

2015 Nov S. S. Lam, W. S. Tam, C. W. Kok, S. Lai, Philip W. T. Pong, and H. Wong, “Sensitivity Distortion of Split-Drain MAGFET under Alternating Magnetic Field”, IEEE TENCON, Macau, 2016, Paper No. 1372

2015 Jul **Invited Conference Paper:**

Philip W. T. Pong, L. Li, and K. Zhu, "Spintronic Sensors and Smart Living", 8th International Conference on Materials for Advanced Technologies of the Materials Research Society of Singapore, Singapore, 2015, Paper No. X8-2

2015 May L. Li, C. W. Leung, A. Ruotolo, C. Jiang, and Philip W. T. Pong, "Morphology-Controlled Growth of Magnetic Iron Oxide Components on Gold Nanoparticles as Bi-Functional Agents", IEEE International Magnetics Conference, Beijing, China, 2015, Paper No. GW-13

2015 May T. Zeng, Y. Zhou, K. Lin, P. Lai, and Philip W. T. Pong, "Realization of Ultra-Wide Resonance Detection Regime of Spin-Torque Diode Radio-Frequency Detector by Utilizing Tilted Fixed-Layer Magnetization", IEEE International Magnetics Conference, Beijing, China, 2015, Paper No. HP-06

2015 May L. Li, C. W. Leung, and Philip W. T. Pong, "Effect of Synthesis Conditions on the Physiochemical Properties of Lauric Acid Coated Magnetite Nanoparticles", IEEE International Magnetics Conference, Beijing, China, 2015, Paper No. FS-08

2015 May L. Li, C. W. Leung, Y. Du, C. M. Wong, and Philip W. T. Pong, "Capping-Ligands-Induced Synthesis of Nonspherical Magnetite Nanoparticles for Hyperthermia and their Biocompatibility Study", IEEE International Magnetics Conference, Beijing, China, 2015, Paper No. EV-14

2015 May L. Li, W. Lo, C. W. Leung, S. Ng, and Philip W. T. Pong, "Elimination of Hysteresis Effect in Superparamagnetic Nanoparticle Detection by GMR Sensors for Biosensing", IEEE International Magnetics Conference, Beijing, China, 2015, Paper No. CT-03

2015 Mar Philip W. T. Pong, L. Li, and K. Zhu, "Application of Magnetoresistive Sensors in Biodetection and Smart Grid", 13th Magnetoresistive Sensors and Magnetic Systems Symposium, Wetzlar, Germany, 2015, Page 36 - 46

2014 Oct C. Zhang, X. Li, and Philip W. T. Pong, "Comprehensive Noise Characterization of Magnetic Tunnel Junction Sensors over Wide Temperature Range for Investigating Sensor Performance and Temperature Detection", 3rd International Conference of Asian Union of Magnetics Societies, Haikou, China, 2014, Paper No. A8-P19

2014 Oct **Invited Conference Paper:**

Philip W. T. Pong, "Biodetection Platform with Magnetic Nanoparticles and Spintronic Sensors", 3rd International Conference of Asian Union of Magnetics Societies, Haikou, China, 2014, Paper No. A9-05

2014 Sep X. Li, K. W. Lin, H. T. Liang, P. L. Liu, W. C. Lo, D. L. Cortie, F. Klose, J. van Lierop, L. Li, and Philip W. T. Pong, "The Effects of Oxygen Ion-Beam Bombardment on the Surface of Co Thin Films and the Resulting Modified Magnetic Properties" 40th International Conference on Micro and Nano Engineering, Lausanne, Switzerland, 2014, Paper No. 8279

2014 Sep L. Li, C. W. Leung, K. Y. Chan, C. P. Jiang, A. Ruotolo, and P. W. T. Pong, "Characterization and Bio-Binding Ability Study on Size-Controllable Highly Monodisperse Magnetic Nanoparticle". 40th International Conference on Micro and Nano Engineering, Lausanne, Switzerland, 2014, Paper No. 8299

2014 Sep C. Jiang, C. W. Leung, L. Li, and Philip W. T. Pong, "Synthesis and Inkjet Printing of Monodisperse Silver Nanoparticle for Printed Electronics" 40th International Conference on Micro and Nano Engineering, Lausanne, Switzerland, 2014, Paper No. 8519

2014 Aug L. Li, K. Y. Mak, C. M. Wong, C. W. Leung, J. Shi, and Philip W. T. Pong, "Dimensional Effect of Microgrooved Surfaces on Normal Hepatocyte, Hepatoma, and HeLa Cells Behavior", 2nd International Congress on Materials and Renewable Energy & Nanomaterials Symposia, Hong Kong, 2014, Paper No. MRE-298

2014 Aug L. Li, H.K. Woo, Y. Sun, K.Y. Mak, C.W. Leung, Y.M. Du, P. T. Lai, C. M. Wong, J. Shi, Philip W. T. Pong, "Influence of oxygen plasma treatment on nanogroove-prepatterned polydimethysiloxane (PDMS) in modulating cellular behavior", 2nd International Congress on Materials and Renewable Energy & Nanomaterials Symposia, Hong Kong, 2014, Paper No. MRE-298(a)

2014 Jul X. Sun, Q. Huang, Y. Hou, L. J. Jiang, and P. W. T. Pong. "Noncontact Operation-State Monitoring technology Based on Magnetic-Field Sensing for Overhead High-Voltage Transmission Lines". IEEE Power & Energy Society General Meeting, Washington DC, USA, 2014, Paper No. 14PESGM1513

2014 May S. L. Siu, W. S. Tam, C. W. Kok, C. W. Leung, H. Wong, and P. W. T. Pong. "Sectorial SD-MAGFET for High Speed Mechatronic Applications". IEEE 3rd International Symposium on Next-Generation Electronics, Taoyuan, Taiwan, 2014, Paper No. M1-5

2014 May C. Zheng, K. W. Lin, C. W. Leung, J. van Lierop, P. W. T. Pong, C. H. Liu, T. H. Wu, Y. H. Chen, and R. Desautels. "Microstructural and Magnetic Characterization of Ion-Beam Bomdarded $[Ni_{80}Fe_{20}\text{-}Cr]_{50}$ Thin Films". IEEE 3rd International Symposium on Next-Generation Electronics, Taoyuan, Taiwan, 2014, Paper No. M2-4

2014 May W. S. Tam, S. L. Siu, C. W. Kok, C. W. Leung, and P. W. T. Pong. "Process Induced Magnetic Sensitivity Variation in Sectorial Split-Drain Magentic Field-Effect Transistor". IEEE 3rd International Symposium on Next-Generation Electronics, Taoyuan, Taiwan, 2014, Paper No. Y13-12

2014 May T. Zeng, Y. Zhou, C. W. Leung, P. T. Lai, and P. W. T. Pong. "Capacitance Effect on Switching Characteristics of Spin-Torque Oscillators". IEEE 3rd International Symposium on Next-Generation Electronics, Taoyuan, Taiwan, 2014, Paper No. N1-4

2014 May T. Zeng, Y. Zhou, K. W. Lin, P. T. Lai, and P. W. T. Pong. "Dynamic Behavior of Dual-Vortex Cores in Elliptical Thin Film Stimulated by In-Plane Magnetic Field Pulses". IEEE International Magnetics Conference, Dresden, Germany, 2014, Paper No. GS-15

2014 May L. Li, A. Ruotolo, C. W. Leung, and P. W. T. Pong. "Size-Control and Characterization of Highly Monodispersed Magnetite Nanoparticles for Bio-Detection". IEEE International Magnetics Conference, Dresden, Germany, 2014, Paper No. FW-5

2014 May Y. Du, L Li, J. Shi, C. M. Wong, and P. W. T. Pong. "Detection of HIV Infection with Spintronic Immunoassay Based on Exchange-Biased GMR Sensors". IEEE International Magnetics Conference, Dresden, Germany, 2014, Paper No. BU-8

2014 May Y. Du, L. Li, J. Shi, C. M. Wong, and P. W. T. Pong. "Development of Magnetic βhCG Immunoassay Based on Exchange-Biased GMR Sensors". IEEE International Magnetics Conference, Dresden, Germany, 2014, Paper No. BU-12

2013 Nov **Invited Conference Paper:**

Q. Huang, Y. Song, X. Sun, and P. W. T. Pong, "Magnetics in smart grid". Asia-Pacific Data Storage Conference, Hualien, Taiwan, 2013, Paper No. M-11

2013 Nov X. Sun, Y. Hou, W. K. Lee, and P. W. T. Pong, "Underground power cable detection and inspection based on magnetic field sensing at ground surface level". Asia-Pacific Data Storage Conference, Hualien, Taiwan, 2013, Paper No. PK-5

2013 Nov Q. Huang, X. Wang, W. Zhen, and P. W. T. Pong, "Broadband point measurement of transient magnetic interference with magnetoresistive sensors". Asia-Pacific Data Storage Conference, Hualien, Taiwan, 2013, Paper No. PK-6

2013 Nov C. Cao, Y. Zhou, L. Jiang, and P. W. T. Pong, "Injection locking of spin-torque nano-oscillators". Asia-Pacific Data Storage Conference, Hualien, Taiwan, 2013, Paper No. PE-7

2013 Sep **Invited Conference Paper:**

P. W. T. Pong, Q. Huang, X. Sun, C. K. Lee, and R. S. Y. Hui, "Spintronic sensors enabling smart grid". V Euro-Asian Symposium "Trends in MAGnetism": Nanomagnetism, EASTMAG-2013, Vladivostok, Russia, 2013, Paper No. Th-6N-I1_Pong

2013 Sep Q. Huang, X. Wang, W. Zhen, and P. W. T. Pong, "Point measurement of transient magnetic interference in substations with broadband magnetoresistive sensors". V Euro-Asian Symposium "Trends in MAGnetism": Nanomagnetism, EASTMAG-2013, Vladivostok, Russia, 2013, Paper No. Th-N-03P_Pong

2013 Sep H.K. Woo, Y.Sun, K.Y. Mak, C.W. Leung, Y. Du, L. Li, P. T. Lai, C. H. Leung, C. M. Wong, J. Shi, and P. W. T. Pong, "Effect of O_2 –plasma treatment on nanogrooved PDMS surfaces for modulating cellular behavior of mammalian cells". 39th International Conference on Micro and Nano Engineering, London, United Kingdom, 2013, Paper No. P-Life-26

2013 Sep H.K. Woo, K.Y. Mak, Y. Du, L. Li, C. M. Wong, J. Shi, and P. W. T. Pong, "Effect of bi-directional microfabricated topographical cues on cellular behavior of mammalian cell line". 39th International Conference on Micro and Nano Engineering, London, United Kingdom, 2013, Paper No. P-Life-25

2013 Sep K.Y. Mak, C.W. Leung, L. Li, C. M. Wong, J. Shi, P. W. T. Pong, "Comparative study on cellular responses of hepatic cells and carcinoma cells to groove and spacing dimensions of microgrooved PDMS surfaces". 39th International Conference on Micro and Nano Engineering, London, United Kingdom, 2013, Paper No. P-Life-13

2013 Sep K.Y. Mak, Kelvin T. H. Hui, Vivas H. F. Chan, L. Li, C. M. Wong, C.W. Leung, J. Shi, P.T. Lai, C.H. Leung, and Philip W. T. Pong, "Analysis of effect of micro- and nano-fabricated patterns on biological systems: a flexible MATLAB-based image processing software". 39th International Conference on Micro and Nano Engineering, London, United Kingdom, 2013, Paper No. P-Life-7

2013 Sep H.K. Woo, K.Y. Mak, Y. Du, L. Li, C. M. Wong, J. Shi, and P. W. T. Pong, "In vitro study on the combined effect of gravity and microgrooved surface topography on cellular behavior of mammalian cell line for medical implant design". 39th International Conference on Micro and Nano Engineering, London, United Kingdom, 2013, Paper No. O-Life-02

2013 Jul C. Shueh, B. C. Lai, G. Li, P. W. T. Pong, J.V. Lierop, K.W. Lin, "*The Effects of Single Crystalline Substrates and Ion-Beam Bombardment of Exchange-Biased NiO/NiFe Bilayers*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No.RC-03

2013 Jul Z. Y. Yang, S. L. Siu, W. S. Tam, C. W. Kok, C. W. Leung, P. T. Lai, H. Wong, W. M. Tang, and P. W. T. Pong, "*Split-Drain Magnetic Field-Effect Transistor Channel Charge Trapping and Stress Induced Sensitivity Deterioration*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No.EB-08

2013 Jul S. L. Siu, Z. Y. Yang, W. S. Tam, C. W. Kok, C. W. Leung, P. T. Lai, H. Wong, W. M. Tang, and P. W. T. Pong, "*Magnetic Sensing Dynamic Range of Sectorial Split-Drain Magnetic Field-Effect Transistor*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No PF-12

2013 Jul G Li, P. J. Chen, A. Castillo, R. D. Shull, Z. Y. Yang, R. S. Y. Hui, and P. W. T. Pong, "*Thermal Stability of CoFe/Al_2O_3/CoFe Magnetic Tunnel Junction Sensors*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No. QD-06

2013 Jul G Li, P. J. Chen, A. Castillo, R. D. Shull, Z. Y. Yang, R. S. Y. Hui, and P. W. T. Pong, "*Optimizing Conetic Magnetic Tunnel Junction Sensors by Plasma Oxidation and Insert Layer*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No. QD-07

2013 Jul Tui Zeng, Yan Zhou, Johan Åkerman, P. T. Lai, and Philip W. T. Pong, "*Linear Phase Tuning of Spin Torque Oscillators Using In-Plane Microwave Fields*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No. FA-06

2013 Jul L. Li, K. Y. Mak, C. W. Leung, C. H. Leung, A. Ruotolo, K.Y. Chan, W.K. Chan, and P. W. T. Pong, "*Synthesis and Morphology Control of Gold/Iron oxide Magnetic Nanocomposites via a Simple Aqueous Method*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No. QE-04

2013 Jul L. Li, Y. M. Du, K. Y. Mak, C. W. Leung, and P. W. T. Pong, "*Novel Hybrid Au/Fe3O4 Magnetic Octahedron-like Nanoparticles with Tunable Size*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No. QE-03

2013 Jul X. Sun, P. T. Lai, and P. W. T. Pong, "*A Novel Bar-Shaped Magnetic Shielding for Magnetoresistive Sensors in Current Measurement on Printed Circuit Boards*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No. PF-02

2013 Jul X. Sun, Q. Huang, L. J. Jiang, and P. W. T. Pong, "*Overhead High-Voltage Transmission-Line Current Monitoring By Magnetoresistive Sensors and Current Source Reconstruction at Transmission Tower*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No. PF-01

2013 Jul T. Zeng, Y. Zhou, K. W. Lin, P. T. Lai, and P. W. T. Pong, "*Thermally Excited Mag-Noise in Ferromagnetic Ring Structures*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No. PE-01

2013 Jul Yimeng Du, Li Li, C. W. Leung, P. T. Lai, and Philip W. T. Pong, "*Synthesis and Characterization of Silica-Encapsulated Iron Oxide Nanoparticles*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No. PD-06

2013 Jul X. Sun, Y. Hou, and P. W. T. Pong. "*Underground Power Cable Detection and Inspection Technology Based on Magnetic Field Sensing and Source Reconstruction*". International Symposium on Advanced Magnetic Materials and Applications, Taichung, Taiwan, 2013, Paper No. PF-11

2013 Jan T. Zeng, Y. Zhou, K. Lin, P. Lai, and P. W. T. Pong. "*Size Dependence on Thermally Excited Mag-Noise Spatial Distribution in Magnetic Tunnel Junction Sensors*". 12th Joint Magnetism and Magnetic Materials / IEEE International Magnetics (MMM/Intermag) Conference, Chicago, USA, 2013, Paper No. BP-03

2013 Jan G. J. Li, C. W. Leung, Y. Cheng, J. Hsu, A. Sun, K. Lin, and P. W. T. Pong. "*Effect of Oxygen Stoichiometry on Microstructural and Magnetic Properties of FePt/TaO_x Bilayer Fabricated by Ion-Beam-Bombardment Deposition*". 12th Joint Magnetism and Magnetic Materials / IEEE International Magnetics (MMM/Intermag) Conference, Chicago, USA, 2013, Paper No. CT-09

2013 Jan Z. Lei, Z. Yang, P. Chen, A. Castillo, G. Feng, R. Shull, R. Hui, and P. W. T. Pong. "*Thermal Stability of Magnetic Tunnel Junction Sensors with Conetic Alloy"*. 12th Joint Magnetism and Magnetic Materials / IEEE International Magnetics (MMM/Intermag) Conference, Chicago, USA, 2013, Paper No. CX-06

2013 Jan L. Li, K. Y. Mak, C. W. Leung, K. Y. Chan, W. K. Chan, and P. W. T. Pong. "*Synthesis of Gold/Iron Oxide Magnetic Nanowires and Nanospheres Using Sodium Citrate via Aqueous Method*". 12th Joint Magnetism and Magnetic Materials / IEEE International Magnetics (MMM/Intermag) Conference, Chicago, USA, 2013, Paper No. EP-07

2013 Jan Z. Yang, S. Siu, W. Tam, C. Kok, C. W. Leung, H. Wong, and P. W. T. Pong. "*Sensing Hysteresis in Split-Drain Magnetic Field-Effect Transistor*". 12th Joint Magnetism and Magnetic Materials / IEEE International Magnetics (MMM/Intermag) Conference, Chicago, USA, 2013, Paper No. FW-10

2013 Jan L. Li, K. Y. Mak, C. W. Leung, S. M. Ng, Z. Q. Lei, and P. W. T. Pong. "*Detection of 10 nm Superparamagnetic Magnetite Nanoparticles Using Exchanged-Biased GMR Sensors in Wheatstone Bridge*". 12th Joint Magnetism and Magnetic Materials / IEEE International Magnetics (MMM/Intermag) Conference, Chicago, USA, 2013, Paper No. FW-02

2012 Nov Z. Q. Lei, F. H. Leung, C. H. Hau, K. S. Lui, W. Y. Szeto, and P. W. T. Pong. "*Green Transport System: A Technology Demonstration of Adaptive Road Lighting with Giant Magnetoresistive Sensor Network for Energy Efficiency and Reducing Light Pollution*". 2nd International Conference on Engineering and Technology Innovation, Kaohsiung, Taiwan, 2012, Paper No. G1084

2012 Nov S. Zhang, W. K. Lee, and P. W. T. Pong. "*Train Detection by Magnetic Field Measurement with Giant Magnetoresistive Sensors for High-Speed Railway*". 2nd International Conference on Engineering and Technology Innovation, Kaohsiung, Taiwan, 2012, Paper No. S17002

2012 Sep G. J. Li, C. W. Leung, Yi-Jing. Wu, An-Cheng Sun, Jen-Hwa Hsu, P. T. Lai, Ko-Wei Lin, and P. W. T. Pong. "*Enhanced Structural and Magnetic Ordering of FePt/TiO_x Bilayers by Ion-Beam Deposition and Annealing*". 38th International Conference on Micro and Nano Engineering, Toulouse, France, 2012, Paper No. 0150

2012 Sep K. Y. Mak, L. Li, C. M. Wong, C. W. Leung, J. Shi, H. K. Koon, C. S. K Mak, N. M. M. Chan, and P. W. T. Pong. "*Effects of Nanoporous and Microgrooved Substrates on Cell Morphology and Cell Migration of Hepatoma Cells".* 38th International Conference on Micro and Nano Engineering, Toulouse, France, 2012, Paper No. 0038

2012 Sep G. J. Li, Q. Dong, C. W. Leung, P. W. T. Pong, W. Y. Wong, and P. T. Lai. "*Micro- and Nano-Structured FePt Patterned by Direct Imprint Lithography*". 38th International Conference on Micro and Nano Engineering, Toulouse, France, 2012, Paper No. 0151

2012 Sep L. Li, K. Y. Mak, C. W. Leung, K. Y. Chan, W. K. Chan, W. Zhong, and P. W. T. Pong. "*Effect of Synthesis Conditions on the Properties of Citric Acid Coated Iron Oxide Nanoparticles*". 38th International Conference on Micro and Nano Engineering, Toulouse, France, 2012, Paper No. 0004

2012 Sep G. J. Li, C. W. Leung, Ying-Ching Chen, An-Cheng Sun, Jen-Hwa Hsu, P. T. Lai, Ko-Wei Lin, and P. W. T. Pong. "*Effect of Annealing Temperature on Microstructural and Magnetic Properties of FePt Capped with Ion-Beam Deposited TaO_x*". 38th International Conference on Micro and Nano Engineering, Toulouse, France, 2012, Paper No. 0147

2012 Sep X. Sun, L. Jiang, and P. W. T. Pong. "*Magnetic Flux Concentration at Micrometer Scale*". 38th International Conference on Micro and Nano Engineering, Toulouse, France, 2012, Paper No. 0156

2012 Sep L. Li, K. Y. Mak, J. Shi, C. H. Leung, C. M. Wong, C. W. Leung, C. S. K. Mak, K. Y. Chan, N. M. M. Chan, E. X. Wu, and P. W. T. Pong. "*Sterilization on Dextran-Coated Iron Oxide Nanoparticles: Effects of Filtration, Autoclaving, and Ethanol Treatment*". 38th International Conference on Micro and Nano Engineering, Toulouse, France, 2012, Paper No. 0006

2012 Jun L Li, Z. Q. Lei, K. Y. Mak, C. W. Leung, J. Shi, C. M. Wong, W. K. Chan, K. W. Lin, N. M. M. Chan, C. H. Leung, E. X. Wu, and P. W. T. Pong. "*HIV Disease Detection Platform with Magnetic Nanoparticles and MgO-Based Magnetic Tunnel Junction Sensors*". International Symposium on Integrated Functionalities, Hong Kong, 2012, Paper No. P810

2012 Jun G. J. Li, S. M. Ng, Q. C. Dong, C. W. Leung, K. W. Lin, W. Y. Wong, and P. W. T. Pong. "*FePt Pillars for Bit Patterned Magnetic Recording*". International Symposium on Integrated Functionalities, Hong Kong, 2012, Paper No. P114

2012 Jun G. J. Li, Q. C. Dong, M. K. Li, C. W. Leung, K. W. Lin, P. T. Lai, W. Y. Wong, and P. W. T. Pong. "*Effect of Annealing Time on FePt Nanoparticles for Magnetic Recording*". International Symposium on Integrated Functionalities, Hong Kong, 2012, Paper No. P113

2012 Jun L. Li, C. W. Leung, K. Y. Chan, W. Zhong, and P. W. T. Pong. "*Self-Assembled Monolayer and Bilayer Carboxyl-Group Functionalized Magnetic Nanoparticles for Bio-Detection*". International Symposium on Integrated Functionalities, Hong Kong, 2012, Paper No. 811

2012 Jun T. H. Hui, R. Rock, C. W. Leung, and P. W. T. Pong. "*Modelling of Graphite Superlattices with Radius-Optimized Area-Averaging Method*". International Symposium on Integrated Functionalities, Hong Kong, 2012, Paper No. P411

2012 May X. Sun, G. Chan, C. L. Sum, W. K. Lee, L. J. Jiang, and P. W. T. Pong. "*Operation State Identification for Underground Power Cables by Magnetoresistive Sensors*". IEEE International Magnetics Conference 2012, Vancouver, Canada, Paper No. GG-11

2012 May L. Li, Z. Q. Lei, K. Y. Mak, C. W. Leung, J. Shi, C. M. Wong, W. K. Chan, K. W. Lin, N. Chan, C. H. Leung, E. Wu, and P. W. T. Pong. "*HIV Disease Immunoassay with Magnetic Nanoparticles and MgO-Based Magnetic Tunnel Junction Sensors*". IEEE International Magnetics Conference 2012, Vancouver, Canada, Paper No. FF-09

2012 May Z. Q. Lei, G. Feng, P. J. Chen, P. T. Lai, and P. W. T. Pong. "*Angular Dependence of Low-Frequency Noise in Magnetic Tunnel Junction Sensors with Conetic Alloy*". IEEE International Magnetics Conference 2012, Vancouver, Canada, Paper No. ET-11

2012 May L. Li, K. Y. Mak, C. W. Leung, K. Y. Chan, W. Zhong, and P. W. T. Pong. "*Synthesis and Characterization of Self-Assembled Monolayer and Bilayer Carboxyl-Group Functionalized Magnetic Nanoparticles for Bio-Detection*". IEEE International Magnetics Conference 2012, Vancouver, Canada, Paper No. CF-07

2012 May T. Zeng, Y. Zhou, K. W. Lin, P. T. Lai, and P. W. T. Pong. "*Edge Effect on Thermally Excited Mag-Noise in Magnetic Tunnel Junction Sensors*". IEEE International Magnetics Conference 2012, Vancouver, Canada, Paper No. AP-14

2011 Nov G. Li, C. Leung, Y. Chen, K. Lin, and P. W. T. Pong. "*Effect of Annealing Temperature on Microstructure and Magnetism of FePt/TaO$_x$ Bilayer*". 56th Annual Conference on Magnetism and Magnetic Materials, Scottsdale, Arizona, USA, 2011, Paper No. GU-15

2011 Nov Z. Lei, L. Li, G. Li, C. Leung, J. Shi, C. Wong, C. Mak, D. Chan, N. Chan, C. Leung, P. Lai, and P. W. T. Pong. "*Liver Cancer Immunoassay with Magnetic Nanoparticles and MgO-Based Magnetic Tunnel Junction Sensors*". 56th Annual Conference on Magnetism and Magnetic Materials, Scottsdale, Arizona, USA, 2011, Paper No. DV-07

2011 Nov G. Li, C. Leung, Y. Chen, K. Lin, and P. W. T. Pong. "*Effect of Oxygen Stoichiometry on Microstructural and Magnetic Properties of FePt/TaO$_x$ Bilayer*". 56th Annual Conference on Magnetism and Magnetic Materials, Scottsdale, Arizona, USA, 2011, Paper No. CW-06

2011 Oct K. Y. Mak, L. Li, C. M. Wong, C. W. Leung, S. B. Chan, J. Shi, H. K. Koon, S. K. Mak, M. M. Chan, and P. W. T. Pong. "*Biocompatibility of PDMS Microgrooves and Nanoporous Anodized Aluminum Membrane to Bel-7402 Cells and Their Effects on Cell Adhesion, Cell Spreading and Cell Motility*". 6th International Conference on Surfaces, Coatings and Nano-Structured Materials, Krakow, Poland, 2011, Paper No. NANO-101

2011 Oct L. Li, K. Y. Mak, J. Shi, H. K. Koon, C. H. Leung, C. M. Wong, C. W. Leung, C. S. K. Mak, N. M. M. Chan, S. B. Chan, W. Zhong, E. X. Wu, and P. W. T. Pong. "*In vitro Cytotoxicity Study of Magnetic Iron Oxide Nanoparticles on Normal Human Cells (RPE) and Cancer Cells (HeLa)*". 6th International Conference on Surfaces, Coatings and Nano-Structured Materials, Krakow, Poland, 2011, Paper No. NANO-100

2011 Oct L. Li, K. Y. Mak, J. Shi, C. H. Leung, C. M. Wong, C. W. Leung, C. S. K. Mak, N. M. M. Chan, S. B. Chan, and P. W. T. Pong. "*Influence of Autoclaving on Dextran-Coated Iron Oxide Magnetic Nanoparticles*". 6th International Conference on Surfaces, Coatings and Nano-Structured Materials, Krakow, Poland, 2011, Paper No. NANO-99

2011 Sep G. J. Li, C. W. Leung, H. R. Huang, K. W. Lin, P. T. Lai, and P. W. T. Pong. "*Effect of Ion-Beam Bombardment on Exchange Bias of NiO/NiFe Bilayers During Film Growth Process*". The 8th Asian European International Conference on Plasma Surface Engineering, Dalian, China, Paper No. P-255

2011 Sep G. J. Li, C. W. Leung, Y. J. Wu, K. W. Lin, P. T. Lai, and P. W. T. Pong. "*Oxygen-Stoichiometry-Dependent Microstructural and Magnetic Properties of CoPt Capped with Ion-Beam-Assisted Deposited TiO$_x$*". The 8th Asian European International Conference on Plasma Surface Engineering, Dalian, China, Paper No. P-254

2011 Sep G. J. Li, C. W. Leung, Y. J. Wu, K. W. Lin, P. T. Lai, and P. W. T. Pong. "*Effect of Annealing Temperature on the Microstructrual and Magnetic Properties of FePt Capped with Ion-Beam-Assisted Deposited TiO_x*". The 8th Asian European International Conference on Plasma Surface Engineering, Dalian, China, Paper No. P-253

2011 Sep W. W. T. Fok, T. K. Cheng, P. W. T. Pong, C. C. Ngan, and R. Ho. "*Local Weather Effect on the Town Island PV System*". Energy Procedia, vol. 12, 480 (2011)

2011 Sep W. W. T. Fok, T. K. Cheng, P. W. T. Pong, C. C. Ngan, and R. Ho. "*Local Weather Effect on the Town Island PV System*". IEEE International Conference on Smart Grid and Clean Energy Technologies, Chengdu, China, 2011, Paper No. PSP028

2011 Sep Invited Conference Paper:

Z.Q. Lei, X. Sun, Q. Huang, P. T. Lai, Y. Hou, C. W. Leung, Y. Zhou, and P. W. T. Pong. "*Magnetoresistive Sensors and Their Applications*". International Union of Materials Research Societies 12th International Conference in Asia (IUMRS-ICA), Taipei, Taiwan, 2011, Paper No. 0864

2011 Sep L. Li, K. Y. Mak, J. Shi, C. H. Leung, C. M. Wong, C. W. Leung, C. S. K. Mak, N. M. M. Chan, S. B. Chan, W. Zhong, C. Shueh, K. W. Lin, and P. W. T. Pong. "*Synthesis, Characterization, and in vitro Biocompatibility Assay of Fe_3O_4 Nanoparticles*". International Union of Materials Research Societies 12th International Conference in Asia (IUMRS-ICA), Taipei, Taiwan, 2011, Paper No. 1359

2011 Apr X. Sun, C. Tam, K. Lui, K. Wong, W. Lee, P. Lai, and P. W. T. Pong. "*Novel Application of Magnetoresistive Magnetic Sensors in Monitoring Overhead Transmission Line Sagging and Galloping for Smart Grid*". IEEE International Conference on Magnetics 2011, Taipei, Taiwan, Paper No. AX-11

2011 Apr Z. Lei, L. Li, C. Leung, G. Li, W. F. Egelhoff, P. Lai, and P. W. T. Pong. "*Detection of Iron Oxide Magnetic Nanoparticles Using Magnetic Tunnel Junction Sensors with Conetic Alloy*". IEEE International Conference on Magnetics 2011, Taipei, Taiwan, Paper No. AV-06

2010 Dec Z. Q. Lei, G. J. Li, P. T. Lai, and P. W. T. Pong. "*A Magnetically Shielded Instrument for Magnetoresistance and Noise Characterizations of Magnetic Tunnel Junction Sensors*". IEEE International Conference of Electronic Devices and Solid-State Circuits (EDSSC) 2010

2010 Oct Z. Q. Lei, G. J. Li, W. F. Egelhoff, Jr., P. T. Lai, and P. W. T. Pong. "*Magnetic Tunnel Junction Sensors with Conetic Alloy*". Asia-Pacific Data Storage Conference, Hualien, Taiwan, 2010, Paper No. PF-12

2010 Oct K. W. Lin, H. J. Wu, A. C. Sun, J. H. Hsu, P. W. T. Pong, and T. Suzuki. "*Enhanced Structural and Magnetic Ordering of FePt/Mn-Oxide Bilayers by Ion-Beam Bombardment and Annealing*". Asia-Pacific Data Storage Conference, Hualien, Taiwan, 2010, Paper No. PA-7

2010 Oct Z. Q. Lei, G. J. Li, W. F. Egelhoff, P. T. Lai, and P. W. T. Pong. "*Review of Noise Sources in Magnetic Tunnel Junction Sensors*". (Invited oral) Asia-Pacific Data Storage Conference, Hualien, Taiwan, 2010, Paper No. M-13

2010 Oct K. S. Hung, W. K. Lee, V. O. K. Li, K. S. Lui, P. W. T. Pong, K. K. Y. Wong, G. Yang, and J. Zhong. "*On Wireless Sensors Communication for Overhead Transmission Line Monitoring in Power Delivery Systems*". 2010 1st IEEE International Conference on Smart Grid Communications (SmartGridComm), p. 309 – 314

2010 Jun Invited Conference Paper:

X. Sun, H. F. Chan, S. C. F. Tam, W. W. T. Fok, Q. Huang, W. K. Lee, K. S. Lui, K. K. Y. Wong, P. W. T. Pong. "*Renewable Energy, Smart Grid, and Sensor Network*". (Oral) Build4Asia Conference 2010 Proceedings, Hong Kong

2010 Jun Philip W. T. Pong, Z. Lei, G. Li, Frank K. W. Lin, and William F. Egelhoff. "*Key Factors for Realizing picoTesla Magnetic-Tunnel-Junction Sensors*". 22th Annual Conference on Magnetics, Taiwan Association for Magnetic Technology, Taichung, Taiwan (poster presentation)

2010 Jan R. C. L. Li, J. Unguris, A. S. Edelstein, J. E. Burnette, G. A. Fischer, E. R. Nowak, W. F. Egelhoff, and P. W. T. Pong. "*Magnetic Tunnel Junction Magnetic Field Sensor Design Tool*". 2010 3rd International Nanoelectronics Conference (INEC), p. 1149 (Paper No. EC423)

2009 Sep P. W. T. Pong. *"Development of Magnetic Tunnel Junction (MTJ) Magnetic Field Sensors",* 5th Taiwan International Conference on Spintronics, Taichung, Taiwan, p. B129 – B154

2009 Jul Ronald C. L. Li, R. D. McMichael, A. S. Edelstein, E. R. Nowak, W. F. Egelhoff, Jr., and P. W. T. Pong "*Spreadsheet-Based Ultrasensitive Magnetic Field Sensor Design Tool Using Microsoft Excel*". IET Hong Kong Younger Members Exhibition/Conference 2009

2009 Jul Hilary K. Y. Mak, J. C. M. Wong, D. C. W. Leung, H. T. Huang, D. S. B. Chan, J. J. Shi, C. S. K. Mak, N. M. M. Chan, P. W. T. Pong "*Study of Cellular Behaviour on Micro- and Nano- Structures*". IET Hong Kong Younger Members Exhibition/Conference 2009

2009 Jul H. K. Y. Mak, J. C. M. Wong, D. C. W. Leung, D. S. B. Chan, J. J. Shi, C. S. K. Mak, N. M. M. Chan, and P. W. T. Pong. "*Study of Cellular Behaviour on Micro- and Nano- Structures*". World Congress on Bioengineering 2009, Hong Kong, Paper No. P1.24

2009 Jun "*Ultrasensitive Magnetic Field Sensors and its Potential Applications in Monitoring High Voltage Transmission and Exploring Biomagnetic Effects*", 21st Annual Conference on Magnetics & 2009 Cross-Strait Magnetism Conference, National Sun Yat-Sen University, Kaohsiung, Taiwan, Paper No. II1

2009 Mar W. F. Egelhoff, Jr , J. Bonevich, P. W. T. Pong, C. R. Beauchamp, G. R. Stafford, J. Unguris and R. D. McMichael "*400-Fold Reduction in Saturation Field by Stress Relief in Multilayers*". American Physical Society March Meeting 2009 in Pittsburgh, Pennsylvania, USA, Paper No. J31.00001 (oral presentation)

2008 Aug W. F. Egelhoff, Jr., M. Schmoueli, R. D. McMichael, Philip W. T. Pong, A. S. Edelstein, James Burnette, Greg Fischer, E. R. Nowak "*Recent Progress in Low-Noise Magnetic-Tunnel-Junction Sensors*". United States Military Sensing Symposia Proceedings 2008

2008 Aug E. R. Nowak, R. D. McMichael, Philip W. T. Pong, W. F. Egelhoff, Jr., A. S. Edelstein, James Burnette, Greg Fischer, S.S.P. Parkin. *"Ultralow Magnetic Field Thin-Fim Sensors: Noise Problems and Solutions"*. 2008 Military Sensing Symposia – Battlespace Acoustic and Seismic Sensing, Magnetic & Electric Field Sensors in Laurel, Maryland, USA

2008 May Philip W. T. Pong, Audie Castillo, Andrew Chen, and William F. Egelhoff, Jr. *"The Effect of CoFe Surface Pre-Oxidation on Magnetic Tunnel Junctions".* IEEE International Magnetics Conference 2008, Madrid, Spain, Paper No. DM-14 (Poster presentation)

2008 May Philip W. T. Pong, Cindi Dennis, Audie Castillo, Andrew Chen, and William F. Egelhoff, Jr. *"Temperature Dependence of IrMn Pinning: Single Crystal versus Polycrystalline Effects".* IEEE International Magnetics Conference 2008, Madrid, Spain, Paper No. EM-04 (Poster presentation)

2008 Apr A. S. Edelstein, J. Burnette, G. A. Fischer, S. F. Cheng, W. F. Egelhoff, Jr., P. W. T. Pong, E. R. Nowak, "*Advances in Magnetometry*". Proceedings SPIE 6963, 696315 (2008)

2008 Mar W. F. Egelhoff, P. Pong, R. McMichael, E. Nowak, A. Edelstein, J. Burnett, and G. Fisher. "*Challenges for picoTesla Magnetic-Tunnel-Junction Sensors*". American Physical Society March Meeting 2008 in New Orleans, Louisiana, USA, Paper No. X32.00001

2008 Jan R. Rock, Philip W. T. Pong, *"Contrast Optimized Modeling of Graphite Superlattices with Averaging Algorithm and the Graphite Superlattice Analysis Toolbox"*. Symposium on Surface and Nano Science 2008, Appi, Japan (Oral presentation)

2008 Jan R. Rock, Philip W. T. Pong, *"Study of Graphite Superlattices with Contrast Optimized Modeling"*. Symposium on Surface and Nano Science 2008, Appi, Japan (Poster presentation)

2007 Nov R. Rock, Philip W. T. Pong, "*Graphite Superlattices Simulation Software and its Research Applications*". 74th Annual Meeting of the Southeastern Section of the American Physical Society, Nashville, Tennessee, USA, Paper No. NB.00007 (Oral presentation)

2007 Nov Se Young O, Chan-Gyu Lee, A.J. Shapiro, W. F. Egelhoff, Jr., Philip W.T. Pong, "*X-Ray Diffraction Study of the MgO Growth for Magnetic Tunnel Junctions"*. 52nd Magnetism and Magnetic Materials Conference 2007, Tampa, Florida, USA, Paper No. GS-03 (Poster presentation)

2007 Nov Philip W. T. Pong, Moshe Schmoueli, Feifei Li, and William F. Egelhoff, Jr. "*A New Effective Method for Thermal Annealing of Magnetic Tunnel Junctions in Air with Ru, Au, Al_2O_3 as Protective Overlayers*". 52nd Magnetism and Magnetic Materials Conference 2007, Tampa, Florida, USA, Paper No. FP-05 (Poster presentation)

2007 Nov Philip W. T. Pong, Cindi Dennis, and William F. Egelhoff, Jr. "*Detection of Pinholes in Magnetic Tunnel Junctions by Magnetic Coupling*". 52nd Magnetism and Magnetic Materials Conference 2007, Tampa, Florida, USA, Paper No. GS-08 (Poster presentation)

2007 Oct Se Young O, Chan-Gyu Lee, A.J. Shapiro, W. F. Egelhoff, Jr., Philip W.T. Pong, "*MgO Growth Conditions for Magnetic Tunnel Junctions"*. American Physical Society Ohio Section Fall Meeting, Oxford, Ohio, USA, Paper No. C1.00002 (Oral presentation)

2007 Aug Philip W. T. Pong and William F. Egelhoff, Jr. "*Fabrication Strategies for Magnetic Tunnel Junctions with Magnetoelectronic Applications*". Proceedings SPIE 6645, 66451V (2007)

2007 Aug Philip W. T. Pong, M. Schmoueli, E. Marcus, and William F. Egelhoff, Jr. "*A Novel Low-Cost High-Throughput Probe Card Scanner Analyzer for Characterization of Magnetic Tunnel Junctions*". Proceedings SPIE 6648, 66480P (2007)

2007 Aug Philip W. T. Pong and William F. Egelhoff, Jr. "*Fabrication of Spintronic Devices - Etching Endpoint Detection by Resistance Measurement for Magnetic Tunnel Junctions*". Proceedings SPIE 6645, 66450S (2007)

2007 Aug Philip W. T. Pong, Robert McMichael, Alan S. Edelstein, Edmund R. Nowak, and William F. Egelhoff, Jr. "*Preliminary Design and Noise Considerations for an Ultrasensitive Magnetic Field Sensor*". (Oral) Proceedings SPIE 6645, 66450T (2007)

2007 Aug Philip W. T. Pong, John E. Bonevich, and William F. Egelhoff, Jr. "*Development of Ultra-Low Magnetic Field Sensors with Magnetic Tunnel Junctions*". (Oral) Proceedings SPIE 6645, 66450B (2007)

2007 Aug E. R. Nowak, R. D. McMichael, Philip W. T. Pong, W. F. Egelhoff, Jr., A. S. Edelstein, James Burnette, Greg Fischer, S.S.P. Parkin. "*The Prospects for picoTesla Magnetic-Tunnel-Junction Sensors*". (Oral) United States Military Sensing Symposia Proceedings 2007

2007 Aug R. Rock, W. T. Pong, "*Graphite Superlattice Simulation Software and its Applications*". National Institute of Standards and Technology Summer Undergraduate Research Fellowship Colloquium 2007, Gaithersburg, Maryland, USA (Oral presentation)

2007 Feb Philip W. T. Pong, "*Development of Ultrasensitive Magnetic Field Sensor*". 14th Annual Sigma Xi Postdoctoral Poster Presentation in National Institute of Standards and Technology 2007, Gaithersburg, Maryland, USA (Poster presentation)

2006 Nov R.Rock, W.T.Pong. "*Modeling of Nanoscale Graphite Superlattices and its Applications*". The 73rd Annual Meeting of the Southeastern Section of the APS (American Physical Society) in Williamsburg, Virginia, USA, Paper No. EC.00002 (Oral presentation)

2006 Aug R. Rock, W. T. Pong, "*Contrast Enhancement and Applications of Graphite Superlattice Modeling*". National Institute of Standards and Technology Summer Undergraduate Research Fellowship Colloquium 2006, Gaithersburg, Maryland, USA (Oral presentation)

2005 May W.T.Pong, C.Durkan. "*Construction of an Ultrahigh Vacuum Scanning Tunnelling Microscope (UHVSTM) for Atomic-Level Characterization of Magnetic Systems*". Proceedings of the 5th International Conference of the European Society for Precision Engineering and Nanotechnology 2005, vol.1, p. 241

2005 Mar W.T.Pong, H.Li, W.Harneit, C.Durkan. "*Deposition of Free Radical Organic Molecules for Scanning Probe Microscopy Analysis*". The United Kingdom Scanning Probe Microscopy Conference 2005 in Warwick, United Kingdom (Oral presentation)

2005 Mar W.T.Pong, J.Bendall, C.Durkan. "*Observation and Investigation of Graphite Superlattice Boundaries by Scanning Tunnelling Microscopy*". The United Kingdom Scanning Probe Microscopy Conference 2005 in Warwick, United Kingdom (Oral presentation)

2005 Mar W.T.Pong, C.Durkan. "*Study of Anomalous Phenomenon on Graphite Superlattice by Simple Modelling*". The United Kingdom Scanning Probe Microscopy Conference 2005 in Warwick, United Kingdom (Poster presentation)

2004 Dec W.T.Pong, C.Durkan, J.Bendall. "*Observation of Large-Scale Features on Graphite under Scanning Tunnelling Microscope*". The 12th International Colloquium on Scanning Probe Microscopy in Shizuoka, Japan, Paper No. S1-3 (Oral presentation)

2004 Dec W.T.Pong, C.Durkan. "*Simple Model of Graphite and its Applications in Superlattice*". The 12th International Colloquium on Scanning Probe Microscopy in Shizuoka, Japan, Paper No. 30 (Poster presentation)

2004 Nov W.T.Pong, C.Durkan. "*Imaging Free Radical Organic Molecules with Scanning Probe Techniques*". Conference on Nano-molecular Analysis for Emerging Technologies in the National Physical Laboratory of the United Kingdom (Poster presentation)

2004 Sep W.T.Pong. "*Single Electron Spin Detection with STM-ESR"* Interdisciplinary Research Collaboration (IRC) in Nanotechnology Nanoscale Characterisation and Biological Nanoscience Workshop in Bristol (UK) (Poster presentation)

2004 Jul W.T.Pong, C.Durkan. *"Single Electron Spin Detection with Scanning Tunneling Microscope"* First Japan – UK Nanotechnology Students' Summer School at National Institute for Materials Science, Tsukuba, Japan (Oral presentation)

2003 Dec W.T.Pong. *"Single Electron Spin Detection with STM-ESR"* IRC in Nanotechnology Annual Science Meeting in London (UK) (Poster presentation)

2003 Oct W.T.Pong. "*Single Electron Spin Detection with STM-ESR"* Nanoscience and Photonics PhD Graduate School 2003 in Denmark (Poster presentation)

2002 Jun W.T.Pong, Alfred Wong. *"Feasibility of 50-nm Device Manufacture by 157-nm Optical Lithography: an Initial Assessment".* (Oral) IEEE Hong Kong Electron Device Meeting 2002, p. 31-34.

2002 Mar W.T.Pong, Alfred Wong. "*Quantification of Image Quality".* (Oral) Proceedings of Microlithography Conference - SPIE The International Society for Optical Engineering, vol. 4691, p. 169-178.

Invited Talks

2025 Nov **Panelist:**

Presentation Title ""Port Electrification: Challenges and Academic Partnership" in the Session "Decarbonizing Port Activities", 3rd Annual Conference Port Electrification East, Jersey City, New Jersey, United States, 12-13 Nov 2025

2025 Nov **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 4th International Conference on Clean Energy Storage and Power Engineering, Xiamen, China (Virtual), 21-23 Nov 2025

2025 Nov **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 2nd International Conference on Big Data, Computational Intelligence and Applications (BDCIA), Huanggang, China (Virtual), Nov 14 2025

2025 Aug **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 6th International Conference on Advances in Electrical Engineering and Computer Applications (AEECA 2025), Dali, China (Hybrid), Aug 22-24 2025

2025 Mar **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 2nd International Conference on
Electronics, Electrical and Control System, Dali, China (Virtual), Mar 7-8 2025

2024 Dec **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 5th International Conference on Telecommunications, Optics and Computer Science (TOCS2024), Guangzhou, China (Virtual), Dec 27-29 2024

2024 Dec **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 3rd International Conference on Clean Energy Storage and Power Engineering, Sangya, China (Virtual), Dec 5 2024

2024 Nov **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 2nd International Conference on Big Data, Computational Intelligence and Applications (BDCIA), Huanggang, China (Virtual), Nov 16 2024

2024 Sep "Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Online Seminar, Institute of Communications Engineering, National Sun Yat-Sen University, Taiwan, September 10 2024

2024 Aug **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 5th International Conference on Clean and Green Energy Engineering, Izmir, Turkey (virtual), August 24-26 2024

2024 Aug **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 5th International Conference on Advances in Electrical Engineering and Computer Applications (AEECA2024) & 2024 International Conference on New Power System and Power Electronics (NPSPE2024), Dalian, China (virtual), August 16-18 2024

2024 Jul **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Global Meet on Sensors and Sensing Technology (GMSST2024) (Webinar), July 18 2024

2024 Jun **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", International Conference on Energy and Electrical Engineering (ICEEE 2024), Nanchang, China (virtual), July 5-6 2024

2024 Jun **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 2nd Global Meet on Renewable and Sustainable Energy (GMRSE2024) (Webinar), June 28 2024

2024 Jun **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", IEEE International Conference on Circuit, Systems and Communication (ICCSC 2024), Fez, Morocco (virtual), June 28-29 2024

2024Jun **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Global Webinar on Renewable and Sustainable Energy, Jun 12 2024

2024 May **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Global Meet on Semiconductors, Optoelectronics and Nanostructures (GMSON2024) (Webinar), May 14 2024

2024 May **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 5th Edition of Electronics and Electrical Engineering Virtual (V-Electrical2024), May 3 2024

2024 Apr **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Global Congress on Electronics, Communications and Networks (GCECN2024) (Webinar), Apr 22 2024

2024 Apr **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", ENERGYMEET2024 Webinar, Apr 18 2024

2024 Apr **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", International Conference on Electronics, Electrical and Control System (EECE2024) Virtual, Apr 12 2024

2024 Mar **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 7th Edition of Renewable and Sustainable Energy Virtual, Mar 22 2024

2024 Mar **Invited Panelist:**

"New Jersey Workforce Development Pathways and Community Benefit Investments", NJ Clean Energy Local Content Day, Tryp Wyndham Hotel, Downtown Newark, New Jersey, Mar 21 2024

2024 Mar **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 3rd Global Summit on Power and Energy Engineering (GSPEE2024) Online, Mar 18 2024

2024 Mar **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 2024 International Conference on Electronics, Information and Industrial Engineering（EIIE2024）Online, Mar 17 2024

2024 Mar "Research, Workforce Training, and Community for Wind Power @NJIT", Renewable Energy Workshop, New Jersey Institute of Technology, Newark, New Jersey, United States, 14 March 2024

2024 Mar **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", SENSORSMEET Webinar, 14 March 2024

2024 Mar **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", RENEWABLEMEET Webinar, 11 March 2024

2024 Jan **Invited Panelist:**

"Electricity Transmission and Storage", New Jersey Academic Alliance for Offshore Wind Energy (A^2OSW) Symposium, Rutgers-New Brunswick, New Jersey, Jan 12 2024

2023 Dec **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 7th International Conference on Power and Energy Engineering, Dec 22-24 2023

2023 Nov **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", International Forum on Nanotechnology and Applications (NANOFORUM2023), Dec 11-13 2023

2023 Nov **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Global Meet on Applied Science, Engineering and Technology (ASET2023), 23-24 Nov 2023

2023 Nov **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", International Summit on Power and Energy Engineering, 23-25 Nov 2023, Lisbon, Portugal

2023 Nov **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Global Summit on Sensors and Sensing Technology (SENTECH2023), 16 Nov 2023

2023 Oct **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 2023 International Conference on Big Data, Computational Intelligence and Applications, 3 Nov 2023

2023 Oct **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 3rd Global Summit on Electronics and Electrical Engineering (GSEEE2023), 26-28 Oct 2023

2023 Oct **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Global Meet on Materials Science and Nanoscience (MAT2023), 23-26 Oct 2023

2023 Oct **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 2nd Edition of Global Webinar on Nanotechnology and Nanoscience, 19-20 Oct 2023

2023 Oct **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", International Summit on Sensors and Sensing Technology (ISSST2023), 16-18 Oct 2023

2023 Oct **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", International Experts Summit on Renewable and Sustainable Energy (IESRSE2023), 4 Oct 2023

2023 Aug **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Global Meet on Power and Energy Engineering, 21 Aug 2023

2023 Aug **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Annual Subsection International Conference of IEEE India Council – 4th Edition (IEEE INDISCON-2023), 7 Aug 2023

2023 Jul **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", International Experts Meet on Applied Science, Engineering, and Technology (WEBASET-2023), 22 July 2023

2023 July **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", International Conference on Circuits, Systems, and Communication (ICCSC) (virtual conference), Frez, Morocco, July 7–8 2023

2023 Jun "Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", School of Mechatronic Engineering and Automation, Shanghai University, online seminar, 29 June 2023

2023 Jun **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 3rd Edition of Electronics and Electrical Engineering Virtual (V-EEE2023), 23 June 2023

2023 Jun **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Global Webinar on Nanotechnology and Nanoscience, 15 June 2023

2023 Jun **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 6th International Conference on Electrical Engineering and Green Energy, 6-9 June 2023

2023 May **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Energy Research eConference (EnergyRes-eCon), 29 – 30 May 2023

2023 Apr **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", International Power and Energy Engineering Virtual V-ENERGY2023, 14-15 April 2023

2023 Mar **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 8th Edition of Applied Science, Engineering and Technology Virtual, 24-25 March 2023

2023 Mar **Plenary Talk:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 5th Edition of Renewable and Sustainable Energy Virtual, 3-4 March 2023

2022 Dec **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 22 International Conference on Clean Energy Storage and Power Engineering (Virtual), 22 Dec 2022

2022 Dec **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 5th Edition of Nanotechnology and Nanomaterials Virtual V-NTNM 2022, 9 Dec 2022

2022 Nov **Keynote Speech:**

"Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 6th International Conference on Power and Energy Engineering, Shanghai, China, 27 Nov 2022

2022 Nov "Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 5th International Conference on Power and Energy Applications, Guangzhou, China, 19 Nov 2022

2022 Nov "Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Materials Aging and Detection Science Laboratory, Pacific Northwest National Laboratory, United States, 3 Nov 2022

2022 Sep "Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, United States 18 Sep 2022

2022 Aug "Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", National Energy Technology Laboratory, Morgantown, West Virginia, United States 18 Aug 2022

2022 Aug "Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", National Institute of Standards and Technology, Gaithersburg, Maryland, United States 16 Aug 2022

2022 Aug "Contactless Magnetic Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", IEEE Magnetics Society "Magnetics for Motors and Electric Machines" Online Seminar Series, 8 Aug 2022

2022 July **Keynote Speech:**

"Contactless Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", 2022 International Conference on Smart Grid and Energy Systems, Kunming, China (virtual)

2022 July **"**Contactless Sensing in Condition Monitoring and Anomaly Detection for Smart Grid: New Possibilities and Alternatives", Grid Interactive Controls Group, Oak Ridge National Laboratory, Tennessee, United States, 8 July 2022

2021 Nov **Keynote Speech:**

"Clean Energy, Smart City and Magnetic Sensing", 2021 International Conference on Smart City and Green Energy, Da Nang, Vietnam (virtual)

2020 Jan **Keynote Speech:**

"Contactless Monitoring of Smart Grids by Magnetic Sensors", 2020 2nd International Conference on Smart Grid and Green Energy, Bali, Indonesia, 14 Jan 2020

2019 Jul **Keynote Speech:**

"Magnetic Sensors Supporting Sustainability through Clean Energy and Smart City", 2019 2nd International Summit on Renewable and Sustainable Energies, Chicago, USA

2019 Jan **Keynote Speech:**

"On the Role of Magnetoresistive Sensors in Autonomous Energy Grids", 2019 International Conference on Smart Grid and Green Energy, Singapore

2018 Dec "Magnetic Sensors: from Devices, Systems, to Applications", Department of Electrical Engineering, Princeton University, USA

2018 Nov **Plenary Talk:**

"Spintronic Sensors for New Energy and New Applications", 3rd International Conference on New Energy and Applications, Singapore, 3 Nov 2018

2018 Nov **Plenary Talk:**

"Advances in Magnetoresistive Sensor Technology for Non-Recording Applications and its Future", 5th International Conference on Advances in Electronics Engineering, Kuala Lumpur, Malaysia

2018 Oct **Keynote Speech:**

"Magnetism Materializing the Trilateral Relationship: Clean Energy-Smart City-Sensing", 14th International Conference on Novel Materials and their Synthesis (IUPAC NMS-XIV), Guangzhou, China

2018 May **Keynote Speech:**

"Trilateral Relation of Clean Energy–Smart City–Sensing: How Magnetic Sensors Can Be The Vanguard of Sustainability", International Conference on Bioenergy and Clean Energy, Hong Kong

2018 Mar **Keynote Speech:**

"Smart City with Clean Energy Enabled by Magnetic Sensing", International Summit on Conventional and Sustainable Energies, Orlando, Florida, USA

2018 Jan "Achieving Teaching-Research Excellence and Balance: Tenure and beyond", Introduction to Teaching and Learning @ HKU, Centre for the Enhancement of Teaching and Learning, The University of Hong Kong, Hong Kong

2017 Nov "Advancing New Frontiers of Autonomous Internet-of-Things (A-IoT) by Magnetic Sensors", National Cheng Kung University, Tainan, Taiwan

2017 Nov "Internet-of-Sensors for Realizing Smart Living: from the Perspective of Magnetism and Magnetic Materials", National Taiwan Normal University, Taipei, Taiwan

2017 Nov "Advancing New Frontiers of Autonomous Internet-of-Things (A-IoT) by Magnetic Sensors", National Taiwan University, Taipei, Taiwan

2017 Nov "Advancing New Frontiers of Autonomous Internet-of-Things (A-IoT) by Magnetic Sensors", Academia Sinica, Taipei, Taiwan

2017 Nov "Advancing New Frontiers of Autonomous Internet-of-Things (A-IoT) by Magnetic Sensors", Morikawa Laboratory, University of Tokyo, Tokyo, Japan

2017 Nov "Make Better "Sense" of Smart Grid for Energy Stability and Efficiency via the New Sensing Capabilities offered by Magnetic Sensors", Tokyo University of Science, Tokyo, Japan

2017 Nov **Keynote Speech:**

"Magnetism in the Age of Internet-of-Sensors (IoS)", 18th International Union of Materials Research Societies International Conference in Asia (IUMRS-ICA), Taipei, Taiwan

2017 Nov **Plenary Talk:**

"Make Better "Sense" of Smart Grid for Energy Stability and Efficiency via the New Sensing Capabilities offered by Magnetic Sensors", International Conference on New Energy and Applications, Tokyo, Japan

2017 Oct **Plenary Talk:**

"Advancing New Frontiers of Autonomous Internet-of-Things (A-IoT) by Magnetic Sensors", 4th International Conference on Advances in Electronics Engineering, Hong Kong

2017 Oct "Internet-of-Sensors for Realizing Smart Living: from the Perspective of Magnetism and Magnetic Materials", School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, China

2017 Oct "Internet-of-Sensors for Realizing Smart Living: from the Perspective of Magnetism and Magnetic Materials", College of Energy and Electrical Engineering, Hohai University, Nanjing, China

2017 Oct "Internet-of-Sensors for Realizing Smart Living: from the Perspective of Magnetism and Magnetic Materials", School of Electrical Engineering, Southeast University, Nanjing, China

2017 Oct **Keynote Speech:**

"Internet-of-Sensors for Realizing Smart Living: from the Perspective of Magnetism and Magnetic Materials" International Conference on Novel Materials and their Synthesis (IUPAC NMS-XIII), Changsha, China

2017 Sep "The Teaching-Research Balance: Tenure and beyond", Introduction to Teaching and Learning @ HKU, Centre for the Enhancement of Teaching and Learning, The University of Hong Kong, Hong Kong

2017 Jun "Magnetic Sensors and Autonomous Internet of Things (A-IoT)", 2017 Taiwan Association for Magnetic Technology Annual Meeting and the 29th Magnetic Science and Technology Conference, Taichung, Taiwan

2016 Dec "Smart Spintronic Sensors: Unforeseen Unique Opportunities for Smart Cities", Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan

2016 Dec "Smart Spintronic Sensors: Unforeseen Unique Opportunities for Smart Cities", Department of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan

2016 Dec "Smart Spintronic Sensors: Unforeseen Unique Opportunities for Smart Cities", Department of Electronics Engineering, National Chiao Tung University, Hsinchu, Taiwan

2016 Dec **Plenary Talk:**

"Smart Spintronic Sensors: Unforeseen Unique Opportunities for Smart Cities", International Conference on New Energy and Applications, Hong Kong

2016 Nov "Roadmap of Magnetoresistive Sensors", Technical Committee Meeting, 61st Annual Conference on Magnetism and Magnetic Materials, New Orleans, USA, 2016

2016 Oct **Keynote Speech:**

"Smart Healthcare with Magnetic Nanoparticles and Spintronic Sensors ", International Conference on Novel Materials and their Synthesis (IUPAC NMS-XII), Changsha, China

2016 Aug "Development and Application of Spintronic Sensors in Smart and Sustainable Living", 4th International Conference of Asian Union of Magnetics Societies (ICAUMS 2016), Tainan, Taiwan

2016 Jun "Spintronic Sensors, Internet of Things, and Smart Living", Collaborative Conference on 3D and Materials Research (CC3DMR), Incheon, South Korea

2016 May "Achieving engineering excellence as an junior academic", 37th Annual General Meeting of Electronics Division, Hong Kong Institution of Engineers, Hong Kong

2016 Jan "Roadmap of Magnetoresistive Sensors", Technical Committee Meeting, IEEE International Magnetics Conference, San Diego, USA, 2016

2015 Jul "Spintronic Sensors and Smart Living", 8th International Conference on Materials for Advanced Technologies of the Materials Research Society of Singapore, Singapore, 2015

2015 Mar "Application of MR Sensors in Biodetection and Smart Grid", 13th Symposium – Magnetoresistive Sensors and Magnetic Systems, Wetzlar, Germany, 2015

2014 Oct "Biodetection Platform with Magnetic Nanoparticles and Spintronic Sensors", 3rd International Conference of Asian Union of Magnetics Societies, Haikou, China, 2014

2014 May "Magnetics in Smart Grid", Technical Committee Meeting, IEEE International Magnetics Conference, Dresden, Germany, 2014

2013 Nov "Magnetics in Smart Grid". Asia-Pacific Data Storage Conference, APDSC 2013, Hualien, Taiwan, 2013

2013 Sep "Spintronic Sensors Enabling Smart Grid". Euro-Asian Symposium "Trends in MAGnetism", EASTMAG-2013, Vladivostok, Russia, 2013

2013 Jun "Magnetism of Iron Oxide Nanoparticles and Magnetic Bio-Detection". Collaborative Conference on Materials Research, Jeju Island, South Korea, 2013

2011 Sep "Magnetoresistive Sensors and Their Applications". International Union of Materials Research Societies 12th International Conference in Asia (IUMRS-ICA), Taipei, Taiwan, 2011

2011 Jul "Clean Energy Research at HKU". Dong Fang Electric Corporation, Chengdu, China, 2011

2010 Oct "Review of Noise Sources in Magnetic Tunnel Junction Sensors". Asia-Pacific Data Storage Conference, Hualien, Taiwan, 2010

2010 May *"Magnetic Tunnel Junction Sensors, Power Grid, and Cancer Research",* Sichuan University, Chengdu, China

2010 May *"Magnetic Tunnel Junction Sensors, Power Grid, and Cancer Research",* UESTC-HKU Academic Interflow Conference, UESTC, Chengdu, China

2009 Dec *"Magnetic Tunnel Junction Sensors, Power Grid, and Cancer Research"*, Nanjing National Laboratory of Microstructures, Nanjing University, Nanjing, China

2009 Nov *"Ultrasensitive Magnetic Field Sensors and its Potential Applications in Power Grid",* Sichuan Provincial Key Lab of Power System Wide-Area Measurement and Control, University of Electronic Science and Technology of China, Chengdu, China

2009 Sep *"Development of Magnetic Tunnel Junction (MTJ) Magnetic Field Sensors",* 5th Taiwan International Conference on Spintronics, Taichung, Taiwan

2009 Aug *"Development of Ultrasensitive Magnetic Field Sensors with Magnetic Tunnel Junctions",* State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China

2009 Aug *"Development and Application of Magnetic Field Sensors and Cancer Research",* Sichuan Province Key Laboratory of Biomagnetics and Biotechnology, University of Electronic Science and Technology of China, Chengdu, China

2009 Jun *"Overview of the University of Hong Kong and the Department of Electrical and Electronic Engineering",* Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan

2009 Jun "*Ultrasensitive Magnetic Field Sensors and its Potential Applications in Monitoring High Voltage Transmission and Exploring Biomagnetic Effects*", 21st Annual Conference on Magnetics & 2009 Cross-Strait Magnetism Conference, National Sun Yat-Sen University, Kaohsiung, Taiwan

Books

2026 Jan "Advances in Sustainable Energy Systems, Storage, and Conservation", ISBN 978-3-031-98996-4, Springer (Editor)

2024 Jul "Renewable Energy Resources and Conservation (Green Energy and Technology)", Springer (Editor)

2011 Apr "*Clean Energy and Environment: Combating Climate Change by Hong Kong Researchers and Professional*". Initiative on Clean Energy and Environment, The University of Hong Kong, Hong Kong, 2011

2010 Apr "*Reconstruction After the 512 Earthquake: Knowledge Exchange and Experiential Learning Projects in Sichuan by Hong Kong Professions*". Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, 2010

Awards, Honors, Media Coverage

May 2025	IEEE Power & Energy Society Chapter Outstanding Engineer Award (North Jersey)
Apr 2025	Excellence in Teaching Award, NJIT Newark College of Engineering
Dec 2024	Nexus of Excellence Award – Excellence in Graduate Instruction, NJIT
Aug 2024	Top 0.5% Scholars in "Sensors" by ScholarGPS based on citations in specific field
Dec 2023	Best Poster Award (PhD student: Akhyurna Swain), "Magnetic Modeling of Wind Turbine Drive Trains for Electrical & Mechanical Fault Classification", New Jersey Offshore Wind Technology Conference 2023, Newark, USA, 2023
Dec 2023	Best Poster Award (PhD student: Ratna Raj), "Hybrid Modular Multilevel Converters for HVDC Transmission in Offshore Wind Energy", New Jersey Offshore Wind Technology Conference 2023, Newark, USA, 2023
Dec 2022	Best Presentation Award (UG student: Raaid Kabir), "A Weather-Based Method for Photovoltaic Power Forecasting Using Artificial Neural Networks approaches", North Jersey Research Student Conference 2022, IEEE North Jersey Chapter, Newark, USA, 2022
Dec 2022	Best Presentation Award (MS student: Sindhu Parimi), "Offshore Wind Farms Data Monitoring Using Optimal IoT Infrastructure", North Jersey Research Student Conference 2022, IEEE North Jersey Chapter, Newark, USA, 2022
Dec 2022	Certificate of Merit (PhD student: Akhyurna Swain), "Condition Monitoring of Wind Turbine Drive Train with Contactless Magnetic Sensors", North Jersey Research Student Conference 2022, IEEE North Jersey Chapter, Newark, USA, 2022
Mar 2022	Best Presentation Award (UG students: Ruby Burgess, Salma Yadri), "A Feasibility Study on Building a Stand-Alone Community Microgrid in the United States", 6th International Conference on Green Energy and Applications, Singapore, 2022, Paper No. E1-011
Dec 2021	Interviewed by Sean Piccoli of MarketWatch, "There's a huge difference in what's inside.' Tech gurus on the 4 best non-Apple iPhone chargers (psst: they start at just $13)" https://www.marketwatch.com/picks/theres-a-huge-difference-in-whats-inside-tech-gurus-on-the-4-best-non-apple-iphone-chargers-psst-they-start-at-just-13-01640105388
Apr 2020	Hong Kong Institution of Engineers Innovation Award – Certificate of Merit (Invention: "Non-Intrusive Monitoring of High-Voltage Multi-Phase Multi-Core Distribution Cables Based on Magnetic-Field Sensing and Computational Intelligence")
Nov 2019	Paper "Overview of Spintronic Sensors With Internet of Things for Smart Living" selected as journal cover page of IEEE Transactions on Magnetics, vol. 55, Number 11, November 2019

Apr 2019	Paper "Magnetoresistive Sensor Development Roadmap (Non-Recording Applications)" selected as journal cover page of IEEE Transactions on Magnetics, vol. 55, Number 4, April 2019
Apr 2019	ACM Distinguished Speaker (2019-2022)
May 2019	Hong Kong Institution of Engineers (HKIE) Certificate of Service
Jun 2018	Hong Kong Institution of Engineers (HKIE) Certificate of Service
Jan 2017	Paper "Magnetically Assembled Iron Oxide Nanoparticle Coatings and Their Integration with Pseudo-Spin-Valve Thin Films" selected as journal cover page of Journal of Materials Chemistry C, vol. 5, Number 2, January 2017
Jul 2016	Faculty Outstanding Teaching Award 2015-2016, The University of Hong Kong
Feb 2016	Young Engineer of the Year Award 2016 – The Hong Kong Institution of Engineers
Dec 2013	Faculty Outstanding Teaching Award (Team Award) 2013, The University of Hong Kong
Sep 2013	Best Poster Award - V Euro-Asian Symposium "Trend in Magnetism": Nanomagnetism 2013, Vladivostok, Russia
Oct 2010	Outstanding Poster Award – Asia-Pacific Data Storage Conference, Hualien, Taiwan
	Awardee: Poster PA-7: Enhanced Structural and Magnetic Ordering of FePt/Mn-Oxide Bilayers by Ion-Beam Bombardment and Annealing
Oct 2009	Student Project Prize – Hong Kong Medical Health Care Device Industries Association (HKMHDIA)
	Awardee: Hilary Kai Yu Mak (for his research project "Study of Cellular Behaviour on Micro- and Nano- Structures")

External Grants

Oct 19 2022 – Aug 31 2023	Schindler Elevator Corporation, "*Exploratory Study of Drone Survey of Elevator Hoistway", Grant Code:* G2718V1, $16,480, PI
Aug 1 2022 – Jul 31 2023	NJ Economic Development Authority, "*NJIT Towards the New Jersey Offshore Wind Training and Research Institute (NJOWTRI): Certificate Training Course, Conference, and Research Facility*", Award No. 00089196-NJOWTRI, $124,941.11, PI
May 18 2022 – Mar 31 2023	The Seeing Eye, Inc., "*Portable vehicle detector based on sensor fusion*", Grant Code: G2718O1, $5000, PI
Nov 30 2021 – Nov 30 2022	Ranial Systems Inc., "*Innovative energy storage solution*", Grant Code: G2718K0, $9000, PI
Nov 1 2017 – Oct 31 2020	General Research Fund, Research Grants Council (Hong Kong), "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, HK$600000, PI
Jul 1 2015 – Dec 31 2016	Innovation and Technology Fund (Tier 3), Innovation and Technology Commission (Hong Kong), "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, HK$1,393,800, PI
Nov 1 2013 – Oct 30 2015	Innovation and Technology Fund (Tier 3), Innovation and Technology Commission (Hong Kong), "Development of a Point-Of-Care Early Liver Cancer Detector Using Magnetic Immunoassay (MIA)", ITS/104/13, HK$997,050, PI

Mar 1 2014 – Aug 31 2015	Innovation and Technology Fund (Tier 3), Innovation and Technology Commission (Hong Kong), "Detection of microwave radiation by nanoscale spintronic device", ITS/171/13, HK$688,505, Co-I
Jan 1 2010 – Dec 31 2020	Area of Excellence, Research Grants Council (Hong Kong), "Theory, Modeling, and Simulation of Emerging Electronics", AoE/P-04/08, HK$90,008,000, Co-I
Oct 12 2011 – Apr 11 2014	General Research Fund, Research Grants Council (Hong Kong), "Low-frequency noise study on junction geometry of magnetic tunnel junction (MTJ) sensors for enhancing sensitivity", HKU704911P, HK$90,008,000 PI
Nov 14 2012 – Nov 13 2014	Innovation and Technology Fund (Tier 3), Innovation and Technology Commission (Hong Kong), "Operation-state monitoring and energization-status identification of underground electricity cables with magnetoresistive sensors", ITS/112/12, PI

PhD Student Supervision (Graduation Year)

2023	Jingyi LIU "Investigation of Magnetic Field Sensing in Electric Power Distribution Networks for Current and Position Monitoring"
2022	Qi XU "Development of Contactless Electromagnetic Sensing Technologies for Key Electric Devices in Microgrids"
2022	Jiahao GUO "Skyrmion-Based Magnetic Devices for Advanced Spintronic Applications"
2022	Shuai YUAN "Development of All-aqueous Based High Throughput Microfluidic Workflow for Biological Applications"
2020	Wenchao MIAO "Development of Condition Monitoring and Fault Detection Technique for Photovoltaic Systems"
2020	Yun TENG "Functionalized Magnetic Nanomaterials for Biomedical Applications"
2019	Xuyang LIU "Development of multifunctional spintronic sensors for monitoring critical parameters of electric vehicles"
2018	Ke ZHU "Non-contact condition monitoring of power transmission/distribution cables based on electromagnetic field sensing"
2017	Xu LI "Operational and structural optimizations of spin-torque microwave detectors"
2017	Chao ZHENG "Low-frequency noise in magnetic tunnel junctions"
2017	Yimeng DU "Surface and composite engineering of iron oxide nanoparticles (IONPs) for biomedical applications"
2017	Chengpeng JIANG "Synthesis, assembly, and integration of magnetic nanoparticles for nanoparticle-based spintronic devices"
2016	Zhenyi YANG "A study on the magnetic sensitivity of sectorial split-drain magnetic field-effect transistor"
2015	Tui ZENG

	"Macrospin and micromagnetic simulations on spintronic devices for magnetic sensors and oscillator application"
2013	Xu SUN "Development of power system monitoring by magnetic field sensing with spintronic sensors"
2013	Zhiqiang LEI "Low-frequency noise study of magnetic tunnel junctions and their applications on biomarker immunoassay"
2013	Li LI "Development of biodetection platform with magnetoresistive sensors and magnetic nanoparticles"
2013	Guijun LI "Development of recording technology with FePt recording media and magnetic tunnel junction sensors with conetic alloy"

Master Thesis Student Supervision (Graduation Year)

2023	Jonathon Kreinberg "Exploratory study of Lidar based UAV mapping of elevator shaft"
2022	David CHEGE "A Novel Compact Sensing Device for Non-Invasive Current Phasor Measurement for Power Quality Monitoring of Multi-Core, Multi-Phase Cables"
2019 (as co-supervisor)	MPhil student, Jintao HU "An investigation into wireless power transfer systems for mid-range applications"
2018	MPhil student, Ping Hoi CHAN "Spin Valves with Conetic Based Free Layer"
2015	MPhil student, Sik Lam SIU "Magnetic Field Sensing Behaviour of Sectorial Split Drain Field Effect Transistor in Mechatronic Application"
2013	MPhil student, Kai Yu MAK "Substratum Effects of Micro- and Nano- Structures on Cellular Behavior"
2010	MSC student, Gary LO "Application of Machine Learning: Stock Index Forecasting"
2009	MSC student, Yi SHENG "Application of Machine Learning: Stock Index Forecasting"
2009	MSC student, Kai DONG "Application of Machine Learning: Stock Index Forecasting"

Master Project Student Supervision (Graduation Year)

2022	Advait Jadhav "Portable Vehicle Detector"
2022	Jonathon Kreinberg "Drone Survey in Elevator Hoistway"
2022	Dhruvl Prejapati "Renewable Energy Forecast with Machine Learning"
2021	Mizan Chowdhury "Economic Feasibility Study of Standalone Community Microgrid in 37 Cities of the USA"