

**Name:** Kwun Nam Hui, PhD, FRSC (Fellow of Royal Society of Chemistry; World Top 2% Scientists by Stanford University/Elsevier since 2021)

**Mailing Address:** N23-4025, Institute of Applied Physics and Materials Engineering, University of Macau, Macao, Avenida da Universidade, Taipa, Macau

Postal Code: 999078

**Official Email:** [bizhui@un.edu.mo](mailto:bizhui@un.edu.mo)

**Personal Email:** [bizhuis@gmail.com](mailto:bizhuis@gmail.com)

**Official:** <https://iapme.um.edu.mo/research/prof-kwun-nam-huis-research-group/>

**Citizenship:** Hong Kong



**Academic and professional qualification (16 years)**

Ph.D., Electrical and Electronic Engineering, The University of Hong Kong, 2009 (**No. 35 THE World University Ranking 2025**)

*Duration:* 01/01/2006-31/12/2008

*Dissertation:* Light-emitting diodes incorporating microdisks and microspheres

*Advisor:* Professor Hoi Wai CHOI

M.Phil., Electrical and Electronic Engineering, The University of Hong Kong, 2006 (**No. 35 THE World University Ranking 2025**)

*Duration:* 01/01/2004-31/12/2005

*Dissertation:* Device optimization studies of organic light emitting devices

*Advisor:* Professor Chik Ho CHOY

B.Sc., Physics, The Hong Kong University of Science and Technology, 2003 (**No. 66 THE World University Ranking 2025**)

*Duration:* 01/09/2000-31/08/2003

*Dissertation:* Fabrication and characterization of AlGaInP SQW LED

*Advisor:* Professor Jiannong WANG

**Academic position (2009 – present)**

Associate Professor, Institute of Applied Physics and Materials Engineering, University of Macau, Macao, China, August 2017 – present (**No. 180 THE World University Ranking 2025**)

Assistant Professor, Institute of Applied Physics and Materials Engineering, University of Macau, Macao, China, August 2015 – July 2017

Associate Professor, School of Materials Science and Engineering, Pusan National University, Busan, Republic of Korea, October 2013 – August 2015 (**No. 501-600 THE World University Ranking 2025**)

Assistant Professor, School of Materials Science and Engineering, Pusan National University, Busan, Republic of Korea, October 2009 – September 2013

Postdoctoral Associate, Department of Electrical and Computer Engineering, Rutgers, the State University of New Jersey, New Jersey, US, March 2009 – August 2009 (**No. 301-350 THE World University Ranking 2025**)

**Number of publications in SCI journal: 290** (150 papers as corresponding author\*);

**WoS:** h-index: **65**; citations: **15,613**;

**Scopus:** h-index: **65**; citations: **14,527**;

**Google Scholar:** h-index: **71**; citations: **16,378**.

### Honors/Scholarship

- 1) Fellow of the Royal Society of Chemistry, 2024 [link](#)
- 2) World Top 2% of Scientists by Stanford University/Elsevier, 2021– present [link](#)
- 3) International expert panels of the Slovak Research and Development Agency, 2024– present
- 4) UKRI Talent Peer Review College, 2024 – present
- 5) “Excellent in Research” Award, 2018, IAPME, UM
- 6) Top #1 Researcher of Brain Korea 21+ Program at School of Materials Science and Engineering, Pusan National University, 2015
- 7) Best Paper Award, ICAE 033, ICAE 2010 - International Conference on Applied Energy, Singapore, 2010
- 8) 1st runner up of Postgraduate Session of IET Younger Members Exhibition Conference, The Institution of Engineering and Technology, Hong Kong, 2008
- 9) Second Prize of (PG) Student Paper Contest, IEEE Hong Kong Section, IEEE, 2008  
DuPont Scholarship, The University of Hong Kong, 2007

### Editorship

- The Advisory Board of Materials, Chemistry and Physics: Sustainability and Energy, <https://www.sciencedirect.com/journal/materials-chemistry-and-physics-sustainability-and-energy/about/editorial-board>, 13/10/2024 – present
- Editorial Board, Scientific Reports, <https://www.nature.com/srep/contact>, 13/01/2025– present
- Editorial Board, Sustainable Chemistry for Energy Materials, <https://www.sciencedirect.com/journal/sustainable-chemistry-for-energy-materials/about/editorial-board>, 01/07/2025 – present
- Guest Editor, Special Issue “Electrolytes for Non-Lithium Based Rechargeable Batteries and Ionic Capacitors”, Frontiers in Chemistry, 2020. <https://www.frontiersin.org/research-topics/11453/electrolytes-for-non-lithium-based-rechargeable-batteries-and-ionic-capacitors>

### Conference Organizers/Chairs

- A Member of the Organizing Committee of the 2nd World Summit and Expo on Nanoscience and Nanotechnology (NANOSUMMIT2026) in Lisbon, Portugal (11/03/2026-13/03/2026)
- A Member of the Organizing Committee of the 5th International Conference on Applied Science, Engineering and Technology (ISTDASET-2025) in Dubai, UAE (21/08/2025-22/08/2025)
- A Member of the Organizing Committee of the 12th Global Webinar on Materials Science and Engineering, online (25/06/2025-26/06/2025)
- A Member of the Organizing Committee of the 8th Global Conference & Expo on Nanoscience and Nanotechnology (ISTSNANO 2025) in Singapore (17/07/2025-18/07/2025)

- Session Chair in 5th Asia Conference on Renewable Energy and Environmental Engineering 2024, Singapore (22/03/2024-24/03/2024)
- A Member of the Local Organizing Committee of the 13th Asian Meeting on Electroceramics (12/11/2023-16/11/2023)
- Session Chair in 4th International Symposium on Engineering and Technology Innovation, Okinawa Convention Center, Okinawa, Japan (26/07/2023-28/07/2023)
- Session Chair in the International Conference on Material and Chemical Engineering (MACE), Phuket, Thailand (26/12/2019-29/12/2019)
- Session Chair in the Global Engineering & Applied Science Conference (GEASC), Tokyo (27/08/2019-29/08/2019)
- A Member of the Local Organizing Committee of The 10th International Conference on Computational Physics (ICCP10) will be held at Holiday Inn, Sands Cotai Central, Macao SAR, China from (16/01/2017-20/01/2017)
- A Member of the Local Organizing Committee of Macao Dialogue on Contemporary Lighting Technologies 2016, taking place in Macao, China (15/12/2016)
- A Member of the Local Organizing Committee in the International Workshop on Functional Materials, Macau 2016 (08/12/2016-11/12/2016)
- I hosted a sharing section between IAPME's PG students and Prof. Lars BRINK, Former Chairman of the Nobel Committee for Physics at the Royal Swedish Academy of Sciences on 3rd March (03/03/2016)
- A Member of the Organizing Committee of the International Conference and Expo on Smart Materials & Structures (Smart Materials 2015) in Las Vegas, USA (15/06/2015-17/06/2015)
- A Member of the Organizing Committee of the 4th Conference on New Energy and Sustainable Development (NESD 2014) in Shanghai, China (26/12/2014-28/12/2014)

## 10 representative publications

1. Qingbin Jiang, Huifang Xu, Kwan San Hui, Yijie Wei, Lingwen Liu, Zhenqing Ye, Chenyang Zha, Mengting Zheng, Jun Lu, **Kwun Nam Hui\***, "Inner-Layer Indium Doping Achieved Highly Active and Stable Sulfur Vacancies in MoS<sub>2</sub> for Superior Sulfur Redox Kinetics", **Advanced Materials**, 2415986 (2025). [link](#)
2. Huixian Xie, Lingwen Liu, Hongyi Chen, Kwan San Hui, Zhuoheng Kuang, Guangmin Zhou, Yuanmiao Sun, Hui-Ming Cheng, **Kwun Nam Hui\***, "Fast-Charging Phosphorus Anodes Enabled by Fluorinated Weakly Solvated Electrolytes for Stable and High-Rate Lithium Storage", **Advanced Materials**, 2504248 (2025). [link](#)
3. Huixian Xie, Lingwen Liu, Bosi Huang, Gongxun Lu, Hongyi Chen, Yuanmiao Sun, Yaqing Guo, Mingkai Liu, Jie Zeng, Guangmin Zhou\*, **Kwun Nam Hui\***, "Amorphous Zinc Phosphate Stabilizes Black Phosphorus Anodes for High-Performance Lithium-Ion Batteries", **Advanced Functional Materials**, e13540, (2025). [link](#)
4. Yunshan Zheng, Zhenjiang Yu, Meijia Qiu, Mengting Zheng, Kwan San Hui, Huifang Xu, Huixian Xie, Yunlong Teng, Jinliang Li, Wenjie Mai, Jun Lu, **Kwun Nam Hui\***, "Self-Adaptive Bismuth Composite Anode for High-Performance Potassium-Ion Batteries", **Advanced Energy Materials**, 2500370 (2025). [link](#)
5. Lingwen Liu, Huixian Xie, Yunshan Zheng, Kwan San Hui, Yuanmiao Sun, Hui-Ming Cheng, **Kwun Nam Hui\***, "Multicomponent Anodes Based on Amorphous ZnP<sub>2</sub> for Fast-Charging/Discharging Lithium-Ion Batteries", **Advanced Energy Materials**, 15, 2404900 (2025). [link](#)
6. Huifang Xu, Qingbin Jiang, Kang Gao, Kwan San Hui, Shuo Wang, Yan Wang, Cheng-Zong

- Yuan, Chenyang Zha, Duc Anh Dinh, **Kwun Nam Hui\***, “Synergistic Nitrogen-Catalytic Engineering Direct K<sub>2</sub>S<sub>3</sub>-to-K<sub>2</sub>S Conversion in High-Performance Potassium-Sulfur Batteries”, **Advanced Energy Materials**, 2500360 (2025). [link](#)
7. Qingbin Jiang, Huifang Xu, Kwan San Hui, Zhengqing Ye, Chenyang Zha, Zhan Lin, Mengting Zheng, Jun Lu, **Kwun Nam Hui \***, “Breaking the Passivation Effect for MnO<sub>2</sub> Catalysts in Li-S Batteries by Anion-Cation Doping”, **Angewandte Chemie International Edition**, 63, e202408474 (2024) [link](#)
  8. Yunshan Zheng, Huixian Xie, Junfeng Li, Kwan San Hui, Zhenjiang Yu, Huifang Xu, Duc Anh Dinh, Zhenqing Ye, Chenyang Zha, **Kwun Nam Hui \***, “Insights into the Jahn-Teller Effect in Layered Oxide Cathode Materials for Potassium-Ion Batteries”, **Advanced Energy Materials**, 11, 2400461 (2024). [link](#)
  9. Shunping Ji, Jielei Li, Junfeng Li, Chunyan Song, Shuo Wang, Kexuan Wang, Kwan San Hui\*, Chenyang Zha, Yunshan Zheng, Duc Anh Dinh, Shi Chen, Jintao Zhang, Wenjie Mai, Zikang Tang, Zongping Shao\*, **Kwun Nam Hui \***, “Dynamic Reversible Evolution of Solid Electrolyte Interface in Nonflammable Triethyl Phosphate Electrolyte Enabling Safe and Stable Potassium-Ion Batteries”, **Advanced Functional Materials**, 32, 2200771 (2022). [link](#)
  10. Shunping Ji, Chunyan Song, Junfeng Li, Kwan San Hui, Wenjun Deng, Shuo Wang, Haifeng Li, Duc Anh Dinh, Xi Fan, Shuxing Wu, Jintao Zhang, Fuming Chen, Zongping Shao, **Kwun Nam Hui\***, “Metal Phosphides Embedded with In Situ-Formed Metal Phosphate Impurities as Buffer Materials for High-Performance Potassium-Ion Batteries”, **Advanced Energy Materials**, 11, 2201197 (2021). [link](#)

▪ **Funded research projects as PI MOP 23.6 million (USD 2.9 million)**

- **Internal:** Start Up (StUp), Institute for Research & Industry Cooperation (IRIC), University Equipment Funding (UEF), Post-Doc fellowship (PDF)
- **External:** National Research Foundation of Korea (NRF), Strategic Research Grant (SRG), Applied Research Grant (ARG), Innovation to Realization Funding (I2RF), Center for Functional Photonics (CFP), Science and Technology Fund of Macau (FDCT), National Science Foundation of China-Macao Science and Technology Development Fund (NSFC-FDCT)

- 1) Development of high-energy-density sulfide solid-state batteries, Shenzhen-Hong Kong-Macao science and technology plan project category C, **03/11/2025-02/11/2027**, MOP 1,665,000 (USD 207,152), **funded**, EF2025-00223-IAPME, Role: PI
- 2) Space-Confined Heteronuclear Dual-Atom Catalysts and Their Mechanistic Role in Lithium-Sulfur Batteries, Multi-Year Research Grant (MYRG), University of Macau, **01/01/2026-31/12/2027**, MOP 480,000 (USD 59,978), **funded**, MYRG-GRG2025-00136-IAPME, Role: PI
- 3) Turning the lattice strain in hierarchical metal selenides and investigating the catalysis mechanism for lean-electrolyte sulfur reduction reaction, Multi-Year Research Grant (MYRG), University of Macau, **01/01/2025-31/12/2026**, MOP 360,000 (USD 44,782), **funded**, MYRG-GRG2024-00166-IAPME, Role: PI
- 4) Research on boronene interface materials in the high-efficiency lithium-sulfur batteries with soft-pack devices, Science and Technology Fund of Macau (FDCT), **01/12/2023-30/11/2026**, MOP 2,100,000 (USD 263,201), **funded**, 0022/2023/RIB1, Role: PI
- 5) Research on the distance effect of neighboring metal single atoms for the electrochemical reduction of carbon dioxide into acetic acid/ethanol, National Science Foundation of China- Science and Technology Fund of Macau (NSFC-FDCT), **01/12/2023-30/11/2026**, MOP 1,950,000 (USD 242,018), **funded**, 0070/2023/AFJ, Role: PI

- 6) Research and development and achievement transformation of high-performance sodium-ion batteries for energy storage, 2022 Guangdong-Hong Kong-Macao Science and Technology Cooperation Theme - Hong Kong and Macao Science and Technology Achievements Transforming into Guangdong, **01/09/2022-31/08/2024**, MOP 545,985 (USD 61,842), **funded**, EF058/IAPME-HKN/2022/GDSTC, Role: PI
- 7) Mechanistic Study of Polysulfide Shuttle Effect of 3D Ordered Macroporous Structure Embedded Multi-centre Metal Atom Catalysts for Lithium-Sulfur Battery, Multi-Year Research Grant (MYRG), University of Macau, **01/01/2023-31/12/2024**, MOP 544,000 (USD 67,281), **funded**, MYRG2022-00223-IAPME, Role: PI
- 8) Large-scale synthesis of single-atom catalysts and industrialization of high-performance zinc-air batteries, Science and Technology Fund of Macau (FDCT), **17/05/2022-16/05/2024**, MOP 850,000 (USD 124,248), **funded**, 0007/2021/AGJ, Role: PI
- 9) Investigation on the Design and Reaction Mechanism of New Double-atom Catalysts for Hybrid Sodium-air Battery, Multi Year Research Grant (MYRG), University of Macau, **01/01/2022-31/12/2023**, MOP 360,000 (USD 44,645), **funded**, MYRG2020-00187-IAPME Role: PI
- 10) Surface/interface modification of solid electrolyte and industrial application of solid state battery, Shenzhen-Hong Kong-Macao science and technology plan project category C, **30/07/2021-31/07/2024**, MOP 564,217 (USD 61,842), **funded**, EF033/IAPME-HG/2021/SZSTIC, Role: PI
- 11) Preparation of single-atom based oxygen reduction catalysts for sodium-air batteries, State Key Laboratory of Organic-Inorganic Composites, Beijing University of Chemical Technology, **01/01/2021-31/12/2021**, MOP 153,152 (USD 18,791), **funded**, oic-202101002, Role: PI
- 12) Study on the Design and Mechanism of New MXene-based Cathode for Li-air Batteries, Wuyi University, **01/01/2020-31/12/2023**, MOP 220,000 (USD 27,290), **funded**, EF026/IAPME-XGN/2021/WYU, Role: PI
- 13) Development and investigation of a high-energy density zinc-air battery, Science and Technology Fund of Macau (FDCT), **24/05/2020-23/05/2022**, MOP 1,000,000 (USD 124,248), **funded**, 0021/2019/AIR, Role: PI
- 14) Development of transition-metal single-atom catalysts on hierarchical porous graphene aerogel for high efficient water electrolysis, Science and Technology Fund of Macau (FDCT), **17/09/2019-16/09/2022**, MOP 2,086,000 (USD 258,764), **funded**, 0041/2019/A1, Role: PI
- 15) Studies on the Key Materials for Long Cycling Life Potassium-Sulfur Batteries, National Science Foundation of China- Science and Technology Fund of Macau (NSFC-FDCT), **17/09/2019-16/09/2022**, MOP 2,037,000 (USD 252,685), **funded**, Role: PI
- 16) Development of Transition Metal Sulfides/Metal Phosphides Core-shell Anchored N-doped Graphene as Bifunctional Catalysts for Direct Ethanol Fuel Cells, Multi Year Research Grant (MYRG), University of Macau, **01/01/2019-31/12/2021**, MOP 1,500,000 (USD 185,520), **funded**, MYRG2018-00192-IAPME, Role: PI
- 17) Development of hollow bimetallic phosphides decorated N-doped carbon  $M_xCo_{3-x}P_y@NC$  (M = Zn, Mn, Ni, Fe, V) bifunctional catalyst for high energy density hybrid sodium-air batteries, Science and Technology Fund of Macau (FDCT), **23/05/2018-22/05/2021**, MOP 1,669,000 (USD 205,304), **funded**, 0191/2017/A3, Role: PI
- 18) Development of porous heteroatom (N, S, P)-doped graphene-encapsulated carbon@nickel-aluminum layered double hydroxide core-shell spheres hybrid structures for high energy and power density flexible solid-state supercapacitors, Multi Year Research Grant (MYRG), University of Macau, **01/01/2017-31/12/2019**, MOP 864,000 (USD 107,780), **funded**, MYRG2017-00216-FST, Role: PI

- 19) Development of NiAl layered double hydroxide/N-doped graphene high energy and power densities solid-state supercapacitor, Science and Technology Fund of Macau (FDCT), **31/03/2016- 30/03/2019**, MOP 1,440,000 (USD 180,252), **funded**, 098/2015/A3, Role: PI
- 20) Development of MnCo<sub>2</sub>O<sub>4</sub>/CuCo<sub>2</sub>O<sub>4</sub> spinel based high energy and power densities asymmetric supercapacitor, Start-up Research Grant, University of Macau, **16/08/2015-17/08/2016**, MOP 150,000 (USD 18,000), **funded**, SRG2015-00057-FST, Role: PI

#### **Before joining UM**

- 21) Development of perovskite-metal hydroxide/oxide nanostructure-based hybrid electrochemical supercapacitors, Indo-Korean Research Internship, **2014-2015**, KRW 24,000,000 (USD 29,389), **funded**, Role: PI
- 22) Development of high crystallinity hierarchical NiMn layered double hydroxide nanosheets on Ni foam for high energy and power density supercapacitor, Institute for Research & Industry Cooperation, Pusan National University, **2014-2015**, KRW 30,000,000 (USD 22,529), **funded**, Role: PI
- 23) Development of metal doped graphene by chemical vapor deposition method, Equipment Grant funded by the Korea government (MSIP) through GCRC-SOP (No. 2011-0030013), **2013-2014**, KRW 60,000,000 (USD 56,322), **funded**, Role: PI.
- 24) Development of high-performance supercapacitors comprising 3D graphene aerogel/NiAl layered double hydroxide nanocomposite, Korea Foundation for the Advancement of Science & Creativity, **2013-2014**, KRW 15,000,000 (USD 14,001), **funded**, Role: PI.
- 25) Engineering the surface properties and pore size distribution of porous graphene and understanding their influences on the capacitive performances of supercapacitor, National Research Foundation of Korea, **2013-2016**, KRW 150,000,000 (USD 133,557), **funded**, Role: PI.
- 26) Development of 1-dimensional High Efficiency Phosphors and their Application to High Brightness White LEDs, NRF Postdoctoral Fellowship, **2013-2014**, KRW 24,000,000 (USD 20,551), **funded**, Role: PI.
- 27) Direct growth of novel nanowire phosphors on blue LED for high luminous efficacy white LED, Center for Functional Photonics, City University of Hong Kong, **2013-2014**, HKD 100,000 (USD 12,857), **funded**, Role: Co-I.
- 28) Fabrication and Characterization of Novel Palladium-graphene Composites and Their Performances in the Catalytic Ozonation of Toluene, Strategic Research Grant, City University of Hong Kong, **2012-2013**, HKD 200,000 (USD 25,641), **funded**, Role: Co-I.
- 29) High brightness GaN LED using functional transparent conductive oxide nanorod arrays, Post-Doc fellowship, Pusan National University, **2012-2013**, KRW 18,000,000 (USD 15,807), **funded**, Role: PI.
- 30) Reliability study of GaN-based blue LEDs employing composite transparent conducting oxide with p-type conduction, Innovation to Realization Funding, City University of Hong Kong, **2012-2013**, HKD 380,000 (USD 48,994), **funded**, Role: Co-I.
- 31) Development and Optimization Vertically-aligned Nanorod High Brightness GaN LEDs, Institute for Research & Industry Cooperation, Pusan National University, **2011-2012**, KRW 5,000,000 (USD 4,330), **funded**, Role: PI.
- 32) University Equipment Funding, Pusan National University, **2011**, KRW 20,000,000 (USD 17,726), **funded**, Role: PI
- 33) Development of Photonic Crystal Structure on Transparent Conducting Oxide Thin Film for High Brightness Blue GaN LEDs, Center for Functional Photonics, City University of Hong Kong, **2011-2012**, HKD 100,000 (USD 12,857), **funded**, Role: Co-I.
- 34) Investigation of Functional Composite Transparent Conducting Oxide Thin Films Based High Brightness GaN LED, Institute for Research & Industry Cooperation, Pusan National

- University, **2010-2011**, KRW 6,000,000 (USD 5,580), **funded**, Role: PI.
- 35) Development of Functional Composite Transparent Conducting Oxide for High Efficiency GaN-LED, Institute for Research & Industry Cooperation, Pusan National University, **2010-2011**, KRW 7,200,000 (USD 6,381), **funded**, Role: PI.
- 36) Development of Functional Composite Transparent Conducting Oxide Thin Films and their Applications to High Brightness White LEDs, National Research Foundation of Korea, **2010-2013**, KRW 180,000,000 (USD 168,666), **funded**, Role: PI.
- 37) Semiconductor Lighting Laboratory, Departmental Startup Funding, Pusan National University, **2009-2011**, KRW 50,000,000 (USD 44,314), **funded**, Role: PI.
- 38) New Faculty Member Funding, Pusan National University, **2009**, KRW 10,000,000 (USD 8,862), **funded**, Role: PI.
- 39) Optimization of an Ozone-catalytic Oxidation (OCO) Reactor for Indoor Toluene Removal, Applied Research Grant, City University of Hong Kong, **2010-2011**, HKD 200,000 (USD 25,641), **funded**, Role: Co-I.
- 40) Performance Assessment of Plasma Assisted Catalytic Oxidation Based Air Purification Technology for Indoor VOCs Removal, Applied Research Grant, City University of Hong Kong, **2010-2011**, HKD 1,500,000 (USD 192,308), **funded**, Role: Co-I.
- 41) Performance Study of Novel Adsorption Foams for Desiccant Cooling Applications, Strategic Research Grant, City University of Hong Kong, **2010-2011**, HKD 180,000 (USD 23,077), **funded**, Role: Co-I.
- 42) A Novel, Green and Fast Approach to Produce Nano-material MCM-41 from Coal Fly Ash: Process Optimization and Applications of MCM-41 in Environment Protection and Energy Generation, Strategic Research Grant, City University of Hong Kong, **2009-2011**, HKD 1,614,600 (USD 207,000), **funded**, Role: Co-I.

#### Invited Plenary Lecture/Talk

2026

- Advances in Lithium-sulfur Batteries: Design of Electrocatalysts (**keynote speaker**), to be presented at the 2nd World Summit and Expo on Nanoscience and Nanotechnology (NANOSUMMIT2026), Lisbon, Portugal, 11-13 March 2026

2025

- Stable Sulfur Vacancies in MoS<sub>2</sub> Enhance Sulfur Redox Kinetics for Lithium-Sulfur Batteries (**invited talk**), presented at the 3rd International Conference on Power and Renewable Energy Engineering (PREE 2025), Nara, Japan, 28-31 October 2025

2024

- Advances in Potassium-ion Batteries: Materials Design and Solid Electrolyte Interface Analysis (**keynote speech**), presented at the 6th International Conference on Resources and Environmental Research (ICRER 2024), Hong Kong, 6-8 December 2024
- Advances in Potassium-ion Batteries: Materials Design and Solid Electrolyte Interface Analysis (**keynote speech**), presented at the 6th Edition of Catalysis, Chemical Engineering and Technology (V-CHEM2024), Virtual, 1 November 2024
- Enhancing Electrochemical Stability of Phosphorus-based Anode for Potassium-Ion Battery with Amorphous Zinc Phosphate Additive (**invited talk**), presented at the 14th International Conference on Environmental Science and Engineering, Hong Kong, 20-22 September 2024.
- Advances in Potassium-ion Batteries: Materials Design and Solid Electrolyte Interface Analysis (**invited talk**), presented at the 5th Asia Conference on Renewable Energy and Environmental Engineering 2024, Singapore, 22-24 March 2024.

2023

- Advances in Potassium-ion Batteries: Materials Design and Solid Electrolyte Interface Analysis (**invited talk**), presented at the International Conference on Intelligent Materials and Green Electrochemistry (IMAGE2023), Guangdong, China, 14-17 December 2023.
  - In situ-formed amorphous metal phosphate as buffer materials for high-performance potassium-ion batteries (**invited talk**), presented at the 13th Asian Meeting on Electroceramics, Macau, China, 12-16 November 2023.
  - Dense Platinum/Nickel Oxide Heterointerfaces with Abundant Oxygen Vacancies Enable Ampere-Level Current Density Ultrastable Hydrogen Evolution in Alkaline (**invited talk**), presented at the 6th International Conference on Green Energy and Environment Engineering (CGEEE 2023), Jeju Island, South Korea, 21-23 July 2023.
  - Design of Electrocatalysts and their Potential Applications in Metal-air Batteries (**keynote speech**), presented at the 4th International Symposium on Engineering and Technology Innovation, Okinawa Convention Center, Okinawa, Japan, 26-28 July 2023.
- 2021
- Design of Electrocatalysts and their Potential Applications in Metal-air Batteries (**invited talk**), presented at the 2021 Energy Storage Materials and Technology Development Forum of Guangdong-Hong Kong-Macao University Materials Science and Engineering Professional Alliance, Zhuhai, China, 23 November 2021.
  - Design of Electrocatalysts and their Potential Applications in Metal-air Batteries (**keynote speech**), to be presented at the 9th International Conference on Mechanical Engineering, Materials Science and Civil Engineering (On Virtual), 6-7 December 2021.
- 2019
- Rational Design of Metal Oxides for High-Performance Supercapacitor (**keynote speech**), presented at the International Conference on Material and Chemical Engineering (MACE), Phuket, Thailand, 26-29 December 2019.
  - Defect Engineering of Nanomaterials for High-performance Supercapacitors (**invited talk**), presented at the Wiley-Guangdong University of Technology International Conference on Energy Chemistry, Guangzhou, China, 20-22 December 2019.
  - Nanomaterials for Energy Storage Devices (**keynote speech**), presented at the Global Engineering & Applied Science Conference (GEASC), Tokyo, 27-29 August 2019.
  - Defect Engineering of Metal Oxide Materials for Energy Storage (**keynote speech**), presented at the International Scientific Conference on Engineering and Applied Sciences (ISCEAS), Hong Kong, 4-6 June 2019.
  - Nanomaterials for energy storage devices (**invited talk**), presented at the Department of Materials, Imperial College London, London, United Kingdom, 3 April 2019.
  - Nanostructured Metal Oxide Materials for Energy Storage (**invited talk**), presented at the College of Energy, Beijing University of Chemical Technology, Beijing, China, 18 January 2019.
- 2018
- Layered Double Hydroxides for High Performance Supercapacitors (**keynote speech**), presented at the ICAMSE 2018 – International Conference on Advanced Materials Science and Engineering, Seoul, South Korea, 17-19 July 2018.
  - Hybrid Materials for High-Performance Flexible Supercapacitors (**keynote speech**), presented at the ISCEAS 2018 – International Scientific Conference on Engineering and Applied Sciences, Okinawa, Japan, 27-29 June 2018.
- 2017
- Electrode Design for High Energy and High Power Densities Supercapacitors (**invited talk**), presented at the School of Materials Science and Engineering, The University of New South Wales, Sydney, Australia, 26 May 2017.

2016

- Porous materials for high-rate energy storage applications (**invited talk**), presented at the 19th Annual Conference of Physical Society of Hong Kong, Hong Kong, 3 – 4 June 2016.
- Engineering Spinel Materials for High Energy Density Supercapacitor (**keynote speech**), presented at the APICENS 2016 – 5th Asia-Pacific International Congress on Engineering & Natural Sciences Conference, Okinawa, Japan, 2 – 4 August 2016.
- Carbon Materials for Energy Conversion and Storage (**invited talk**), presented at the 2016 China International Carbon Materials Conference, Shanghai, 8 – 9 December 2016.

2015

- Design of 3D Nanostructured Materials for High-Performance Supercapacitor (**keynote speech**), presented at the ACENS 2015 – Asian Conference on Engineering and Natural Sciences, Tokyo, Japan, 3 – 5 February 2015.
- Strategic Potential Use of Layered Double Hydroxides as Electrode Materials for Supercapacitors (**keynote speech**), presented at the ICEAS 2015 – International Conference on Engineering and Applied Sciences, Hokkaido, Japan, 20 – 22 July 2015.
- Design of Carbon Materials for Energy Conversion and Storage (**keynote speech**), presented at the APCEAS 2015 – Asia-Pacific Conference on Engineering and Applied Science, Tokyo, Japan, 25 – 27 August 2015.

2014

- 3D nanostructured materials for energy storage (**invited talk**), presented at the NESD2014 – The 4th Conference on New Energy and Sustainable Development, China, 26 – 28 December 2014.

#### Book Chapter (No. 4)

1. D.A. Dinh, **K.N. Hui\*** and K.S. Hui\*, Three-Dimensional Graphene: Synthesis and Application for High-Performance Supercapacitors, CRC Concise Encyclopedia of Nanotechnology, Taylor & Francis Group, pp.258 (2016).
2. Shude Liu, K.S. Hui\* and **K.N. Hui\***, Review of the green synthesis of metal/graphene composites for energy conversion, sensor, environmental and bioelectronic applications, Advanced Bioelectronic Materials, Wiley – Scrivener Publishing, pp. 427 (2015)
3. **K.N. Hui**, Novel III-Nitride Devices and Engineering for Solid-state Lighting, Lambert Academic Publishing, 2010, ISBN: 978-3-8433-8386-8
4. **K.N. Hui\*** and K.S. Hui, Laser Micromachining for Nitride Semiconductor, Advances in Micro/Nano Electromechanical Systems and Fabrication Technologies, Editor Kenichi Takahata, In-tech, 2013, ISBN 980-953-307-774-6

#### Review Paper (No. 26)

1. Mengyao Huang, Kwan San Hui\*, Qingchao Liu, Fuming Chen, Sambasivam Sangaraju, **Kwun Nam Hui\***, “Electronic modulation strategies for enhanced cathode catalysis in lithium–oxygen batteries: challenges, advancements, and future perspectives”, **EES Batteries**, 2025 [link](#)
2. Shun Li\*, Zhanpeng Zhu, Yong Liu, Xinyue Zhang\*, **Kwun Nam Hui\***, “Innovative Engineering Strategies and Mechanistic Insights for Enhanced Carbon-Based Electrocatalysts in Sustainable H<sub>2</sub>O<sub>2</sub> Production”, **Materials Horizons**, 12, 6018 (2025). [link](#)
3. Huixian Xie, Jiacheng Xiao, Hongyi Chen, Boyang Zhang, **Kwun Nam Hui**, Shanqing Zhang, Chenyu Liu\*, Dong Luo\*, Zhan Lin\*, “Fundamental understanding of voltage decay in Li-rich Mn-based layered oxides cathode materials”, **AAPPS Bulletin**, 34, 33 (2024). [link](#)

- Maheshwaran Girirajan, Arjun Kumar Bojarajan, Indra Neel Pulidindi, **Kwun Nam Hui**, Sambasivam Sangaraju\*, “An insight into the nanoarchitecture of electrode materials on the performance of supercapacitors”, **Coordination Chemistry Reviews**, 518, 216080 (2024). [link](#)
- Yunshan Zheng, Huixian Xie, Junfeng Li, Kwan San Hui\*, Zhenjiang Yu, Huifang Xu, Duc Anh Dinh, Zhenqing Ye, Chenyang Zha, **Kwun Nam Hui\***, “Insights into the Jahn-Teller Effect in Layered Oxide Cathode Materials for Potassium-Ion Batteries”, **Advanced Energy Materials**, 11, 2400461 (2024). [link](#)
- Guangfu Dai, Shouzhe Li, Menglin Shi, Lingxin Sun, Ying Jiang, **Kwun Nam Hui**, Zhengqing Ye\*, “Rational Design of Janus Metal Atomic-Site Catalysts for Efficient Polysulfide Conversion and Alkali Metal Deposition: Advances and Prospects”, **Advanced Functional Materials**, 34, 2315563 (2024). [link](#)
- Junfeng Li, Kwan San Hui\*, Duc Anh Dinh, Shuxing Wu, Xi Fan, Fuming Chen, **Kwun Nam Hui\***, “Review of Electrolyte Strategies for Competitive Dual-ion Batteries”, **Materials Today Sustainability**, 19, 100188 (2022). [link](#)
- Xiaolong Xu, Shuo Wang, Shiquan Guo, Kwan San Hui\*, Jiameng Ma, Duc Anh Dinh, **Kwun Nam Hui\***, Hao Wang\*, Lipeng Zhang, Guowei Zhou\*, “Cobalt Phosphosulfide Nanoparticles Encapsulated into Heteroatom-Doped Carbon as Bifunctional Electrocatalyst for Zn-Air Battery”, **Advanced Powder Materials**, 1, 100027 (2022). [link](#)
- Alpha Chi Him Tsang\*, Jintao Zhang, **Kwun Nam Hui\***, Kwan San Hui\*, Haibao Huang\*, “Recent Development and Applications of Advanced Materials via Direct Ink Writing”, **Advanced Materials Technologies**, 7, 2101358 (2022). [link](#)
- Xueying Cao, Dongxing Tan, Bari Wulan, K.S. Hui, **Kwun Nam Hui**, Jintao Zhang\*, “In situ characterization for boosting electrocatalytic carbon dioxide reduction”, **Small Methods**, 5, 2100700 (2021). [link](#)
- Xiaolong Xu\*, Xiuxiu Zhao, Kwan San Hui\*, Duc Anh Dinh, **Kwun Nam Hui\***, “Rechargeable Batteries: Regulating Electronic and Ionic Transports for High Electrochemical Performance”, **Advanced Materials Technologies**, 7, 2101107 (2022). [link](#)
- Shengli Zhaia, Zhuosheng Jiang, Xuncaai Chen, **Kwun Nam Hui\*** and Fuming Chen\*, “Flexible One-Dimensional Zn-Based Electrochemical Energy Storage Devices: Recent Progress and Future Perspectives”, **Journal of Materials Chemistry A**, 9, 26573-26602 (2021). [link](#)
- Xiaolong Xu\*, Kwan San Hui\*, **Kwun Nam Hui\***, Jianxing Shen, Guowei Zhou, Jinhua Liu, Yucheng Sun, “Engineering strategies for low-cost and high-power density aluminum-ion batteries”, **Chemical Engineering Journal**, 418, 129385 (2021). [link](#)
- Xinxin Shu, Maomao Yang, Dongxing Tan, Kwan San Hui, **Kwun Nam Hui** and Jintao Zhang\* “Recent advances in the field of carbon-based cathode electrocatalysts for Zn–air batteries”, **Materials Advances**, 2, 96-114 (2021). [link](#)
- Cheng-Zong Yuan, Kwan San Hui\*, Hong Yin, Siqi Zhu, Jintao Zhang, Xi-Lin Wu, Xiaoting Hong, Wei Zhou, Xi Fan, Feng Bin, Fuming Chen\*, **Kwun Nam Hui\***, “Regulating Intrinsic Electronic Structures of Transition-Metal-Based Catalysts and the Potential Applications for Electrocatalytic Water Splitting”, **ACS Materials Letters**, 3, 752-780 (2021). [link](#)
- Kaixi Wang, **Kwun Nam Hui**, Kwan San Hui, Shaojun Peng\*, Yuxi Xu\*, “Recent progress in metal–organic framework/graphene-derived materials for energy storage and conversion: design, preparation, and application”, **Chemical Science**, 21, 5737-5766 (2021). [link](#)
- Kaixiang Shen, Shengli Zhai, Shaofeng Wang, Qiang Ru, Xianhua Hou, K.S. Hui, **Kwun Nam Hui\*** and Fuming Chen\* “Recent Progress in Binder-free Electrodes Synthesis for Electrochemical Energy Storage Application”, **Batteries & Supercaps**, 4, 860-880 (2021). [link](#)
- Sachin Kumar, Ghuzanfar Saeed, Ling Zhu\*, **Kwun Nam Hui**, Nam Hoon Kim\*, Joong Hee Lee\*, “0D to 3D carbon-based networks combined with pseudocapacitive electrode material

- for high energy density supercapacitor: A review”, **Chemical Engineering Journal**, 403, 126352 (2021). [link](#)
19. X.L. Xu, K.S. Hui\*, **Kwun Nam Hui\***, H. Wang\*, and J.B. Liu “Recent advances in the interface design of solid-state electrolytes for solid-state energy storage devices”, **Materials Horizons**, 7, 1246-1278 (2020). [link](#)
  20. X. Xu, K.S. Hui\*, D.A. Dinh, **Kwun Nam Hui\***, H. Wang\*, "Recent Advances in Hybrid Sodium-Air Batteries," **Materials Horizons**, 6, 1306-1335 (2019). [link](#)
  21. J.D. Desai, P.K. Baviskar, **Kwun Nam Hui**, and H.M. Pathan, “Quadrivalently Doped Hematite Thin Films for Solar Water Splitting”, **ES Energy and Environment**, 2, 21-30 (2018). [link](#)
  22. S.X. Wu, K.S. Hui\* and **Kwun Nam Hui\***, “2D Black Phosphorus: from Preparation to Applications for Electrochemical Energy Storage”, **Advanced Science**, 5, 1700491 (2018). [link](#)
  23. D.A. Dinh, **Kwun Nam Hui\*** and K.S. Hui\*, “Three Dimensional Graphene: A Prospective Architecture for High Performance Supercapacitors”, **Energy and Environment Focus**, 3, 98-120 (2014).
  24. P. Kumar, A.K. Singh, S. Hussain, **Kwun Nam Hui**, K.S. Hui, J.H. Eom, J.W. Jung\* and J. Singh, “Graphene: Synthesis, Properties, and Application in Transparent Electronic Devices”, **Reviews in Advanced Sciences and Engineering**, 2, 238-258 (2013). [link](#)
  25. D.A. Dinh, **Kwun Nam Hui\***, K.S. Hui\*, J. Singh, P. Kumar and W. Zhou, “Parameters affecting the electrical and optical properties of p-type aluminum-doped ZnO: A review”, **Reviews in Advanced Sciences and Engineering**, 2, 259-272 (2013). [link](#)
  26. D.A. Dinh, **Kwun Nam Hui\***, K.S. Hui\*, J. Singh, P. Kumar and W. Zhou, “Silver nanowires: a promising transparent conducting electrode material for optoelectronic and electronic applications”, **Reviews in Advanced Sciences and Engineering**, 2, 324-345 (2013). [link](#)

#### Publications (267)

1. Man Liang, Wei Wang, Minzhang Li\*, Beichi Luo, Qingjie Yang, Lu Guo, **Kwun Nam Hui**, Guangguo Ying, Fuming Chen\*, “Integrated electrochemical system using tin-phthalocyanine/graphene nanocomposite for synergistic formate production and rapid seawater desalination”, **Journal of Colloid and Interface Science**, 139178 (2025). [link](#)
2. Yue Li, Hao Xu\*, Xiaodong Li, Xi Lin, Hongyang Zhao, Yajuan Zhang, **Kwun Nam Hui**, Jinliang Li\*, Likun Pan\*, “Molecular Damping Effect of Trace Additives Enhances Zinc Anode Stability Under High Depth of Discharge”, **Advanced Science**, e07071 (2025). [link](#)
3. Hai Le Tran, Phuong Bich Vo Hoang, **Kwun Nam Hui**, Nguyen Tran Truc Phuong, Gia Phuc Lam, Duc Anh Dinh, “Nanocellulose/TiO<sub>2</sub> composite as a sustainable adsorbent for dye-contaminated wastewater”, **Journal of Energy and Sustainability**, 1, 025250007 (2025). [link](#)
4. Yaohui Shi, Yu Yang, Aoni Xu, **Kwun Nam Hui**, Fengwang Li\*, Jie Zeng\*, “Immobilized Azole Layer Tunes Interfacial Hydrogen Source for CO<sub>2</sub> Electroreduction in Strong Acid”, **Journal of the American Chemical Society**, 147, 35698-35704 (2025). [link](#)
5. Jie Ni, Jie Wei, Yeqi Yu, Ming-Hui Fan, Wanting Liu, **Kwun Nam Hui**, Yan Yan, Yan Liu\*, Yanqiang Huang\*, Jie Zeng\*, “Revealing the Role of Interfacial Water in pH-Dependent Hydroxylamine Electrosynthesis over Bi-Based Catalysts”, **ACS Catalysis**, 15, 15153 (2025). [link](#)
6. Siyu Fang, Tiansheng Bai, Jialin Liao, Shuai Zhang, Jiaxian Wang, Funian Mo\*, Wei Zhai, Zhenglin Hu, Jingyu Lu\*, **Kwun Nam Hui**, Lijie Ci\*, Deping Li\*, “Lithiophilic Cu-Ag Architectures with Li-Si Alloys for Stable Lithium Metal Batteries”, **Energy Storage Materials**, 81, 104541 (2025). [link](#)
7. Xiaolu Liu, Yunshan Zheng, Chengqun Xu\*, Wenjie Zheng, Jie Li, Dongyu Wang, Yifan Chen, Kwan San Hui, Yelong Zhang\*, **Kwun Nam Hui\***, “Tonothermal tuning of oxygen-self-doped

- crystalline carbon nitride for enhanced solar-driven photocatalysis”, **Journal of Environmental Chemical Engineering**, 13, 117948 (2025). [link](#)
8. Qingbin Jiang, Huifang Xu, Kwan San Hui\*, Yijie Wei, Lingwen Liu, Zhenqing Ye, Chenyang Zha, Mengting Zheng\*, Jun Lu\*, **Kwun Nam Hui\***, “Inner-Layer Indium Doping Achieved Highly Active and Stable Sulfur Vacancies in MoS<sub>2</sub> for Superior Sulfur Redox Kinetics”, **Advanced Materials**, 2415986 (2025). [link](#)
  9. Huixian Xie, Lingwen Liu, Hongyi Chen, Kwan San Hui\*, Zhuoheng Kuang, Guangmin Zhou, Yuanmiao Sun, Hui-Ming Cheng\*, **Kwun Nam Hui\***, “Fast-Charging Phosphorus Anodes Enabled by Fluorinated Weakly Solvated Electrolytes for Stable and High-Rate Lithium Storage”, **Advanced Materials**, 2504248 (2025). [link](#)
  10. Huifang Xu, Qingbin Jiang, Kang Gao, Kwan San Hui, Shuo Wang, Yan Wang, Cheng-Zong Yuan, Chenyang Zha, Duc Anh Dinh, **Kwun Nam Hui\***, “Synergistic Nitrogen-Catalytic Engineering Direct K<sub>2</sub>S<sub>3</sub>-to-K<sub>2</sub>S Conversion in High-Performance Potassium-Sulfur Batteries”, **Advanced Energy Materials**, 2500360 (2025). [link](#)
  11. Yijie Wei, Zhengjie Chen, Xin Guo\*, Huixian Xie, Zhefei Sun, Sahar Osman, Jun Xiao, Tianyu Chen, Kwan San Hui, Hui-Ming Cheng, **Kwun Nam Hui\***, “MOF Glass Confined Black Phosphorus via Co—P Anchoring for Advanced Lithium-Ion Battery Anodes”, **Advanced Science**, e11772 (2025). [link](#)
  12. Junfeng Huang, Xiao Xu, Yusheng Yan, Yong Zheng,\* Yuechao Yao, Zhangjian Li, Yan Yan, **Kwun Nam Hui**, Jizhao Zou,\* Mingkai Liu\*, “Facile Microwave Synthesis of Kilogram-Scale Electrocatalysts with Nanocarbons Bridged Cobalt Active Sites for Enhanced Oxygen Electrocatalysis”, **Advanced Energy Materials**, 2500360 (2025). [link](#)
  13. Cao Wu, Jinfeng Jiang, Chenyang Dong, Liming Zhao, Jiabin Liu, Chang Liu, Hailiang Deng,\* **Kwun Nam Hui**, Huan Pang, Yan Yan,\* and Mingkai Liu\*Remarkably Enhance the Stealth/Resistance/Mechanical Properties of Silica-Zirconia Ceramic Aerogel by Phase Transitions and Interface Evolution, **Advanced Functional Materials**, 2502574 (2025). [link](#)
  14. Beng Ma, Pingjuan Yang, Ying Yu, Jiayi Li, Haoyan Cheng,\* Anqi Ji, Fengqi Zhang, Wenxuan Fan, Hao Hu,\* Shegan Gao, Linlin Shi,\* Yan Yan, **Kwun Nam Hui**, and Mingkai Liu\*, “Remarkable Enhancement of the Radiotherapeutic Efficacy via Targeted Reduction of Hypoxic Conditions and Depletion of Intracellular Glutathione Utilizing Cu<sub>2-x</sub>Se@Pt Nanoplatfoms”, **ACS Materials Letters**, 7, 2506-2515 (2025). [link](#)
  15. Xiaolu Liu, Yunshan Zheng, Chengqun Xu\*, Wenjie Zheng, Jie Li, Dongyu Wang, Yifan Chen, Kwan San Hui, Yelong Zhang\*, Kwun Nam Hui\*, “Ionothermal tuning of oxygen-self-doped crystalline carbon nitride for enhanced solar-driven photocatalysis”, **Journal of Environmental Chemical Engineering**, 15, 117948 (2025). [link](#)
  16. Siyu Fang, Tiansheng Bai, Jialin Liao, Shuai Zhang, Jiaxian Wang, Funian Mo\*, Wei Zhai, Zhenglin Hu, Jingyu Lu\*, Kwun Nam Hui, Lijie Ci\*, Deping Li\*, “Lithiophilic Cu-Ag Architectures with Li-Si Alloys for Stable Lithium Metal Batteries”, **Energy Storage Materials**, 81, 104541 (2025). [link](#)
  17. Chenyang Zha\*, Weina Guo, Yuwei Zhao, Huifang Ma, Huifang Xu, Qingbin Jiang, Tianyu Chen, Cheng-Zong Yuan, Kwan San Hui, Linghai Zhang\*, **Kwun Nam Hui\***, “Constructing p-π Conjugated Bonds toward High-performance Flexible Zinc-Iodide Batteries for Wearable Electronics”, **Nano Energy**, 144, 111390 (2025). [link](#)
  18. Jie Ni, Jie Wei, Yeqi Yu, Ming-Hui Fan, Wanting Liu, **Kwun Nam Hui**, Yan Yan, Yan Liu\*, Yanqiang Huang\*, Jie Zeng\*, “Revealing the Role of Interfacial Water in pH-Dependent Hydroxylamine Electrosynthesis over Bi-Based Catalysts”, **ACS Catalysis**, 17, 15153-15161 (2025). [link](#)
  19. Cong-Hui Li, Cheng-Zong Yuan\*, Chen-Liang Zhou, Xuan Yang, Ruilong Xu, Fu-Ling Wu, Lei Xin, Ling-Xian Wang, Xiaomeng Zhang\*, **Kwun Nam Hui**, Shufeng Ye, Yunfa Chen,

- “Stabilizing Ru Single Atoms on Asymmetric La/Co<sub>3</sub>O<sub>4</sub> Supports with Strong Metal–Support Interaction for Efficient Acidic Water Oxidation”, *ACS Catalysis*, 15, 7403-7413 (2025). [link](#)
20. Ling-Xian Wang, Cheng-Zong Yuan\*, Cong-Hui Li, Yu-Ru Zhang, Fuling Wu, Lei Xin, Zheping Wang, Huan Yang, Xianxian Shi\*, Xiaomeng Zhang\*, **Kwun Nam Hui**, Shufeng Ye, Yunfa Chen, “Interfacial Built-In Electric Field and Interatomic Charge Transfer Synergistically Boosting Oxygen Evolution on CeO<sub>2</sub>/Ce-Co<sub>3</sub>O<sub>4</sub> Electrocatalyst”, *Advanced Functional Materials*, 2502122 (2025). [link](#)
  21. Junfeng Li, Yunshan Zheng, Kwan San Hui, Kaixi Wang, Chenyang Zha, Sambasivam Sangaraju, Xi Fan, Yanli Chen, Guangmin Zhou, **Kwun Nam Hui\***, “Boosting anionic redox of TiS<sub>4</sub> via Se anion doping for high-performance Al-ion batteries”, *Next Energy*, 8, 100312 (2025). [link](#)
  22. Guangfu Dai, Huifang Xu, Ying Jiang, Weihao Gong, Haobo Sun, Hongjiao Liu, Kwan San Hui, **Kwun Nam Hui\***, Zhengqing Ye\*, “Harnessing 5d electron spin for asymmetric Ir-Zn atomic pairs toward efficient and durable sulfur conversion catalysis”, *Applied Catalysis B: Environment and Energy*, 378, 125608 (2025). [link](#)
  23. Yunshan Zheng, Zhenjiang Yu, Meijia Qiu, Mengting Zheng\*, Kwan San Hui\*, Huifang Xu, Huixian Xie, Yunlong Teng, Jinliang Li, Wenjie Mai, Jun Lu\*, and **Kwun Nam Hui\***, “Self-adaptive Bismuth composite anode for high-performance potassium-ion batteries”, *Advanced Energy Materials*, 2500370 (2025). [link](#)
  24. Junfeng Huang, Xiao Xu, Yusheng Yan, Yong Zheng\*, Yuechao Yao, Zhangjian Li, Yan Yan, **Kwun Nam Hui**, Jizhao Zou\*, Mingkai Liu\*, “Facile Microwave Synthesis of Kilogram-Scale Electrocatalysts with Nanocarbons Bridged Cobalt Active Sites for Enhanced Oxygen Electrocatalysis”, *Advanced Energy Materials*, 2025 [link](#)
  25. Cao Wu, Jinfeng Jiang, Chenyang Dong, Liming Zhao, Jiabin Liu, Chang Liu, Hailiang Deng\*, **Kwun Nam Hui**, Huan Pang, Yan Yan\*, Mingkai Liu\*, “Remarkably Enhance the Stealth/Resistance/Mechanical Properties of Silica-Zirconia Ceramic Aerogel by Phase Transitions and Interface Evolution”, *Advanced Functional Materials*, 2025 [link](#)
  26. Zheng Liu, Kainan Mei, Yuan Kong, Wanting Liu, Junjie Zou, Wenting Gao, Jiawei Xue, Yan Yan, **Kwun Nam Hui**, Zhirong Zhang\*, Jie Zeng\*, “Modulating Spatial Distributions of Single Atoms on Supports for Enhanced Oxygen Evolution”, *Nano Letters*, 25, 5358-5365 (2025). [link](#)
  27. Zhirong Zhang, Peiyu Ma, Chuanyi Ji, Wenting Gao, Mingkai Liu, **Kwun Nam Hui**, Ming Zuo, Shiming Zhou, Jie Zeng\*, “Site-specific stabilizing effect of single atoms on spinel oxides for acidic oxygen evolution”, *eScience*, 100402 (2025). [link](#)
  28. Rajwali Khan, Shahid Iqbal, **Kwun Nam Hui**, Ejaz Ahmad Khera, Sujith Kalluri, Mukhlisa Soliyeva, Sambasivam Sangaraju\*, “High-Stability Resistive Switching Memristor with High-Retention Memory Window Response for Brain-Inspired Computing”, *Sensors and Actuators A: Physical*, 385, 116316 (2025). [link](#)
  29. Guokai Shi, Junpeng Xie, Zhibin Li, Peng Sun, Ying Yin, Likun Pan, Kwun Nam Hui, Wenjie Mai, Jinliang Li\*, “A bismuth oxide-modified copper host achieving bubble-free and stable potassium metal batteries”, *Chemical Science*, 16, 1344-1352 (2025). [link](#)
  30. Qingbin Jiang, Huifang Xu, Kwan San Hui\*, Zhengqing Ye, Chenyang Zha, Zhan Lin, Mengting Zheng, Jun Lu\*, **Kwun Nam Hui\***, “Breaking the Passivation Effect for MnO<sub>2</sub> Catalysts in Li-S Batteries by Anion-Cation Doping”, *Angewandte Chemie International Edition*, e202408474 (2024) [link](#)
  31. Lingwen Liu, Huixian Xie, Yunshan Zheng, Kwan San Hui\*, Yuanmiao Sun, Hui-Ming Cheng\*, **Kwun Nam Hui\***, “Multicomponent Anodes Based on Amorphous ZnP<sub>2</sub> for Fast-Charging/Discharging Lithium-Ion Batteries”, *Advanced Energy Materials*, 2404900 (2024). [link](#)

32. Tianyu Chen, Zhiwen Min, Zhenjiang Yu, Mengting Zheng, Qingbin Jiang, Huifang Xu, Kwan San Hui\*, Chenyang Zha\*, Jun Lu\*, **Kwun Nam Hui\***, “Molecular Clip Strategy of Modified Sulfur Cathodes for High-Performance Potassium Sulfur Batteries”, **Advanced Science**, 11, 2405457 (2024). [link](#)
33. Yao XuLinwei YinChangsheng YangYing LeiHaiyan Zhang\*, **Kwun Nam Hui**, “Synergistic Effect of Carbon Encapsulation and Iron Doping Based on Metal–Organic Framework Precursor Enhances NaVPO<sub>4</sub>F Electrochemical Performance for Sodium-Ion Batteries”, **ACS Applied Energy Materials**, 7, 11890-11899 (2024). [link](#)
34. Bangjun Wu, Yelong Zhang, Zhongquan Wang, Zhonghua Wang, Zhen Dong, Qingguang Zeng, **Kwun Nam Hui**, Zheng Liu, Zhangquan Peng, “A High-Rate and Ultrastable Re<sub>2</sub>Te<sub>5</sub>/MXene Anode for Potassium Storage Enabled by Amorphous/Crystalline Heterointerface Engineering”, **Advanced Materials**, 36, 2407134 (2024). [link](#)
35. Huixian Xie, Jiacheng Xiao, Hongyi Chen, Boyang Zhang, **Kwun Nam Hui**, Shanqing Zhang, Chenyu Liu\*, Dong Luo\*, Zhan Lin\*, “Fundamental understanding of voltage decay in Li-rich Mn-based layered oxides cathode materials”, **AAPPS Bulletin**, 34, 33 (2024). [link](#)
36. Shuang Zhao, Minjie Liu, Zehua Qu, Yan Yan\*, Zhirong Zhang, Jifeng Yang, Siyuan He, Zhou Xu, Yiquan Zhu, Laihao Luo\*, **Kwun Nam Hui**, Mingkai Liu\*, Jie Zeng, “Cascade Synthesis of Fe-N<sub>2</sub>-Fe Dual-Atom Catalysts for Superior Oxygen Catalysis”, **Angewandte Chemie International Edition**, e202408914 (2024). [link](#)
37. Zhonghua Wang, Zhen Dong, Bangjun Wu, Zhongquan Wang, Zhenping Qiu, Da Wang, Qingguang Zeng, Xiaolu Liu, **Kwun Nam Hui**, Zheng Liu\*, Yelong Zhang\*, “Unlocking the critical roles of N, P Co-Doping in MXene for Lithium-Oxygen Batteries: Elevated d-Band center and expanded interlayer spacing”, **Journal of Colloid and Interface Science**, 676, 368 (2024). [link](#)
38. Jixi Zeng, Xi Fan\*, Jinzhao Wang, Ziqi Zhang, Jiwen Chen, **Kwun Nam Hui**, Weijie Song\*, “Efficient and stable semitransparent perovskite photovoltaics via a Lewis base incorporation”, **Nanoscale**, 16, 14469-14476 (2024). [link](#)
39. Xinyu Chen, Yuwei Zhao, Yunshan Zheng, Huifang Xu, Qingbin Jiang, Tianyu Chen, Kwan San Hui, **Kwun Nam Hui\***, Linghai Zhang\*, Chenyang Zha\*, “Commercially available ionic liquids enable high-performance of aqueous zinc-iodine batteries: Sequestered nitrogen-sites for efficient electrocatalytic iodine conversion”, **Journal of Materials Chemistry A**, 12, 16892-16900 (2024). [link](#)
40. Yuwei Zhao, Linghai Zhang, Yunshan Zheng, Huifang Xu, Qingbin Jiang, Tianyu Chen, Kwan San Hui, **Kwun Nam Hui\***, Lin Wang\*, Chenyang Zha\*, “2D Tungsten Borides Induced Interfacial Modulation Engineering Toward High-Rate Performance Zinc-Iodine Battery”, **Small**, 2402527 (2024). [link](#)
41. Liang Ma, Enze Li, Zhibin Li, Yuanchang Ye, Yikun Su, **Kwun Nam Hui**, Wenjie Mai, Jinliang Li\*, “Electron-repulsion effect of anti-solvent strategy for long-cycle nickel sulfide-containing potassium-ion batteries”, **Nano Energy**, 125, 109545 (2024). [link](#)
42. Zijian Zhang, Jiajin Feng, Ran He, Yelong Zhang, Hangmin Zhu, Feng Wu, Qingguang Zeng, Hui Yu, **Kwun Nam Hui**, Xi Liu\*, Da Wang\*, “Enhancing humidity resistance of nickel-rich layered cathode materials by low water-soluble CaF<sub>2</sub> coating”, **Chemical Communications**, 60, 10025-10028 (2024). [link](#)
43. Ki-Hyun Park, Sobin Mathew, Kyeong-Hwan Kim, Suyeon Kim, Oi Lun Li, Sung-Ho Jin, Raja Kumaresan, Chenyang Zha, **Kwun Nam Hui\***, Young-Rae Cho\*, “Plasma Treatment on Cobalt Sulfide Nanoparticle/Nickel Foam Electrocatalysts for Hydrogen Evolution Reaction”, **ACS Applied Nano Materials**, 7, 8547 (2024). [link](#)
44. Yidong Xiao, Hedong Chen, Minzhang Li\*, Qinyu He, Than Zaw Oo, Mono Zaw, Nyein Wink Lwin, **Kwun Nam Hui**, Min Luo, Danling Tang, Guangguo Ying, Fuming Chen\*, “Ionic liquid redox flow desalination of seawater”, **Desalination**, 574, 117284 (2024). [link](#)

45. Gia Vu Pham, Duc Linh Pham, The Duy Nguyen, Ha Huu Do, **Kwun Nam Hui**, Gia Khanh Pham, Duc Anh Dinh\*, “Solution blending preparation of polyurethane/graphene composite: Improving the mechanical and anti-corrosive properties of the coating on aluminum surface”, **Materials Letters**, 359, 135905 (2024). [link](#)
46. Sobin Mathew, Ki-Hyun Park, Youri Han, **Kwun Nam Hui**, Oi Lun Li\*, Young-Rae Cho\*, “Conductive N, S doped Copolymers as Stable Metal-Free Electrocatalysts for Water Splitting”, **ACS Applied Materials & Interfaces**, 15, 46829 (2024). [link](#)
47. Ha Huu Do, **Kwun Nam Hui**, Pham Gia Vu, Kwan San Hui, Duc Anh Dinh\*, “MOF-derived copper selenides implanted in octahedral carbon matrix for efficient hydrogen evolution reaction”, **Journal of The Electrochemical Society**, 170, 093503 (2024). [link](#)
48. Jixi Zeng, Xi Fan\*, Jinzhao Wang, Jia Li, Jiwen Chen, **Kwun Nam Hui**, Ling Ai, Junfeng Fang, Weijie Song\*, “18.62%-Efficiency Binary Organic Solar Cells with a PEDOT<sub>1</sub>:PSS<sub>2.80</sub> Buffer Layer”, **Advanced Optical Materials**, 12, 2302947 (2024). [link](#)
49. Ji Zhou, Xin Chen, Wenbing Gong, Xiaodong Meng, Chao Chen, Xueqin Zhou, Manyun Wang, **Kwun Nam Hui**, Jianxin Geng\*, “Double-shelled ZnS@CoS<sub>2</sub> nanocages with heterojunctions for high performance cathodes in lithium–sulfur batteries”, **Journal of Energy Storage**, 75, 109505 (2024). [link](#)
50. Huifang Xu, Qingbin Jiang, Kwan San Hui\*, Shuo Wang, Lingwen Liu, Tianyu Chen, Yunshan Zheng, Weng Fai Ip, Duc Anh Dinh, Chenyang Zha, Zhan Lin\*, **Kwun Nam Hui\***, “Interfacial “Double-Terminal Binding Sites” Catalysts Synergistically Boosting the Electrocatalytic Li<sub>2</sub>S Redox for Durable Lithium–Sulfur Batteries”, **ACS Nano**, 18, 8839 (2024). [link](#)
51. Shuo Wang, Cheng-Zong Yuan, Yunshan Zheng, Yao Kang, Kwan San Hui\*, Kaixi Wang, Haixing Gao, Duc Anh Dinh, Young-Rae Cho\*, **Kwun Nam Hui\***, “Boosting the Bifunctionality and Durability of Cobalt-Fluoride-Oxide Nanosheets for Alkaline Water Splitting Through Nitrogen-Plasma-Promoted Electronic Regulation and Structural Reconstruction”, **ACS Catalysis**, 14, 3616 (2024). [link](#)
52. Huifang Xu, Qingbin Jiang, Zheng Shu, Kwan San Hui\*, Shuo Wang, Xiaolu Liu, Huixian Xie, Chenyang Zha, Yongqing Cai\*, **Kwun Nam Hui\***, “Fundamentally Manipulating the Electronic Structure of Polar Bifunctional Catalysts for Lithium-Sulfur Batteries: Heterojunction Design Versus Doping Engineering”, **Advanced Science**, 2307995 (2024). [link](#)
53. Junfeng Li, Yunshan Zheng, Kwan San Hui\*, Kaixi Wang, Chenyang Zha, Duc Anh Dinh, Jiguo Tu, Zongping Shao\*, **Kwun Nam Hui\***, “Enhanced K-Storage Performance in Ultralong Cycle-Life Potassium-Ion Batteries Achieved via Carbothermal-Reduction-Synthesized KVOPO<sub>4</sub> Cathode”, **Energy Storage Materials**, 102852 (2023). [link](#)
54. Zhenjiang Yu, Hongmei Shan\*, Yunlei Zhong, Guo Hong\*, Kwan San Hui, Xia Zhang, **Kwun Nam Hui\***, “Insights into electrode architectures and lithium-ion transport in polycrystalline V<sub>2</sub>O<sub>5</sub> cathodes of solid-state batteries”, **Small**, 2303046 (2023). [link](#)
55. Yunshan Zheng, Junfeng Li, Shunping Ji, Kwan San Hui\*, Shuo Wang, Huifang Xu, Kaixi Wang, Duc Anh Dinh, Chenyang Zha, Zongping Shao\*, **Kwun Nam Hui\***, “Zinc-Doping Strategy on P2-Type Mn-Based Layered Oxide Cathode for High-Performance Potassium-ion Batteries”, **Small**, 2302160 (2023). [link](#)
56. Shuo Wang, Lei Li, Kwan San Hui\*, Duc Anh Dinh, Zhiyi Lu, Qiuju Zhang\*, **Kwun Nam Hui\***, “Non– noble single– atom alloy for electrocatalytic nitrate reduction using hierarchical high– throughput screening”, **Nano Energy**, 113, 108543 (2023). [link](#)
57. Yuwei Zhao, Chang Liu, Chenyang Zha\*, Jing Li, Chongguang Lyu, Kaixi Wang, Junfeng Li, Kwan San Hui, Linghai Zhang\*, **Kwun Nam Hui\***, “Tailoring WB morphology enables d-band centers to be highly active for high-performance lithium-sulfur battery”, **Chinese Chemical Letters**, 108189 (2023). [link](#)
58. Cheng-Zong Yuan, Shuo Wang, Kwan San Hui\*, Kaixi Wang, Junfeng Li, Haixing Gao, Chenyang Zha, Xiaomeng Zhang, Duc Anh Dinh, Xi-Lin Wu, Zikang Tang, Jiawei Wan,

- Zongping Shao\*, **Kwun Nam Hui\***, “In Situ Immobilizing Atomically Dispersed Ru on Oxygen-Defective Co<sub>3</sub>O<sub>4</sub> for Efficient Oxygen Evolution”, **ACS Catalysis**, 13, 2462-247 (2023). [link](#)
59. Haixing Gao, Shuo Wang, Weng-Chon Max Cheong\*, Kaixi Wang, Huifang Xu, Aijian Huang, Junguo Ma, Jiazhan Li, Weng-Fai Andy Ip, Kwan San Hui\*, Duc Anh Dinh, Xi Fan, Feng Bin, Fuming Chen, **Kwun Nam Hui\***, “sp<sup>3</sup>/sp<sup>2</sup> carbon interface derived from ZIF-8 with linker vacancies for oxygen reduction reaction”, **Carbon**, 203, 76-87 (2023). [link](#)
60. Shunping Ji, Yunshan Zheng, Kwan San Hui\*, Junfeng Li, Kaixi Wang, Chunyan Song, Huifang Xu, Shuo Wang, Chenyang Zha, Duc Anh Dinh, Zikang Tang, Zongping Shao\*, **Kwun Nam Hui\***, “Enhanced electrochemical and environmental stability of black phosphorus-derived phosphorus composite anode for safe potassium-ion battery using amorphous zinc phosphate as a multi-functional additive”, **Energy Storage Materials**, 57, 400-410 (2023). [link](#)
61. Pengfei Zhou, Kaitong Sun, Shunping Ji, Zirui Zhao, Ying Fu, Junchao Xia, Si Wu, Yinghao Zhu, **Kwun Nam Hui**, Hai-Feng Li\*, “MgF<sub>2</sub> as an effective additive for improving ionic conductivity of ceramic solid electrolytes”, **Materials Today Energy**, 101248 (2023). [link](#)
62. Kaixi Wang, Shuo Wang, Kwan San Hui\*, Junfeng Li, Chenyang Zha, Duc Anh Dinh, Zongping Shao\*, Bo Yan, Zikang Tang\*, **Kwun Nam Hui\***, “Dense Platinum/Nickel Oxide Heterointerfaces with Abundant Oxygen Vacancies Enable Ampere-Level Current Density Ultrastable Hydrogen Evolution in Alkaline”, **Advanced Functional Materials**, 33, 2211273, (2023). [link](#)
63. Muhammad Faisal Iqbal, Zhiying Chen, Xincheng Zhang, Mahmood Ul Hassan, **Kwun Nam Hui**, Kwan San Hui, Yuyang Yang, Guijun Li, Meng Zhang\*, “Investigation of Electrocatalytic behavior of mesoporous strontium selenide nanowires for hydrogen evolution reaction”, **International Journal of Energy Research**, 76, 46, 24476-24486 (2022). [link](#)
64. Alpha Chi Him Tsang\*, **Kwun Nam Hui\***, Kwan San Hui\*, Biyuan Liu, Leyi Yu, Bin Shi, Haibao Huang, “Ink-printed metal/graphene aerogel for glucose electro-oxidation”, **Battery Energy**, 1, 20220004 (2022). [link](#)
65. Muhammad Faisal Iqbal, Yuyang Yang, Mahmood Ul Hassan, Xincheng Zhang, Guijun Li, **Kwun Nam Hui**, Mohamed Esmat, Meng Zhang\*, “Polyaniline grafted mesoporous zinc sulfide nanoparticles for hydrogen evolution reaction”, **International Journal of Hydrogen Energy**, 47, 60607-6077 (2022). [link](#)
66. Wenjuan Yang, Kaihong Wang, Wenbo Zhou, Ningjing Luo, Shuping Huang, Yafeng Li\*, **Kwun Nam Hui**, Mingdeng Wei\*, “Inspired by the Cu-driven conversion reaction: how anionic properties dictate the electrochemical performance of vanadium sulfide” **Journal of Materials Chemistry A**, 10, 25575 (2022). [link](#)
67. Yuwei Zhao, Donghai Wu, Tingting Tang, Chongguang Lyu, Junfeng Li, Shunping Ji, Chengzong Yuan, Kwan San Hui, Chenyang Zha\*, **Kwun Nam Hui\***, Houyang Chen\*, “In situ tailored strategy to remove capping agents from copper sulfide for building better lithium–sulfur batteries”, **Journal of Materials Chemistry A**, 10, 4015-4026 (2022). [link](#)
68. Tianqing Zheng, Wei Zhou, Xuyang Chu\*, Yunsong Lian, Xiang Huang, Kwan San Hui, **Kwun Nam Hui**, “A columnar regular-porous stainless steel reaction support with high superficial area for hydrogen production”, **International Journal of Hydrogen Energy**, 47, 10204-10216 (2022). [link](#)
69. Huayan Xiao, Juncheng Qiu, Shuxing Wu\*, Liangxin Xie, Wenbo Zhou, Xiujuan Wei, **Kwun Nam Hui**, Ming Zhang\*, Zhan Lin, “Cross-Linked  $\gamma$ -Polyglutamic Acid as an Aqueous SiO<sub>x</sub> Anode Binder for Long-Term Lithium-Ion Batteries”, **ACS Applied Materials & Interfaces**, 14, 18625 (2022). [link](#)
70. Shunping Ji, Jielei Li, Junfeng Li, Chunyan Song, Shuo Wang, Kexuan Wang, Kwan San Hui\*, Chenyang Zha, Yunshan Zheng, Duc Anh Dinh, Shi Chen\*, Jintao Zhang, Wenjie Mai, Zikang

- Tang, Zongping Shao\*, **Kwun Nam Hui\***, “Dynamic Reversible Evolution of Solid Electrolyte Interface in Nonflammable Triethyl Phosphate Electrolyte Enabling Safe and Stable Potassium-Ion Batteries”, **Advanced Functional Materials**, 32, 2200771 (2022). [link](#)
71. Kang Jea Lee, Duc Anh Dinh, Huynh Tran My Hoa, Pham Hoai Phuong, Hoang Hung Nguyen, Kwan San Hui, **Kwun Nam Hui\***, Tran Viet Cuong\*, “Observation of Whispering Gallery Modes in InGaN/GaN Multi-Quantum Well Microdisks with Ag Plasmonic Nanoparticles on Si Pedestals”, **Journal of Electronic Materials**, 51, 2054 (2022). [link](#)
72. Yunfei Li, Xi Fan\*, Cai Shen, Xixiu Shi, Pengcheng Li, **Kwun Nam Hui**, Junpeng Fan, Kai Kang, Ting Zhang\*, Lei Qian\*, “Charge Balance in Red QLEDs for High Efficiency and Stability via Ionic Liquid Doping”, **Advanced Functional Materials**, 32, 2203641 (2022). [link](#)
73. Jianwen Zhou, Yelong Zhang\*, Zheng Liu, Zhenping Qiu, Da Wang, Qingguang Zeng, Chao Yang, **Kwun Nam Hui**, Yong Yang, Zhangquan Peng\*, Shaojun Guo\*, “Defective 1T'-ReSe<sub>2</sub> nanosheets vertically grown on elastic MXene for fast and stable potassium ion storage”, **Science China Materials**, 65, 3418-3427 (2022). [link](#)
74. Xiaolong Xu, Shuo Wang, Shiquan Guo, Kwan San Hui\*, Jiameng Ma, Duc Anh Dinh, **Kwun Nam Hui\***, Hao Wang\*, Lipeng Zhang, Guowei Zhou\* “Cobalt phosphosulfide nanoparticles encapsulated into heteroatom-doped carbon as bifunctional electrocatalyst for Zn–air battery”, **Advanced Powder Materials**, 1, 100027 (2022). [link](#)
75. Junfeng Li, Kwan San Hui\*, Yunshan Zheng, Shunping Ji, Kaixi Wang, Chenyang Zha, Duc Anh Dinh, Xi Fan, Fuming Chen, Zongping Shao\*, **Kwun Nam Hui\***, “Stabilizing Anionic Redox Processes in Electrospun NiS<sub>2</sub>-based Cathode towards Durable Aluminum-ion Batteries”, **Chemical Engineering Journal**, 450, 138237 (2022). [link](#)
76. Shuo Wang, Haixing Gao, Lei Li\*, Kwan San Hui\*, Duc Anh Dinh, Shuxing Wu, Sachin Kumar, Fuming Chen, Zongping Shao\*, **Kwun Nam Hui\***, “High-throughput identification of highly active and selective single-atom catalysts for electrochemical ammonia synthesis through nitrate reduction”, **Nano Energy**, 100, 107517 (2022). [link](#)
77. Zeheng Li, Gu Wu, Yajun Yang, Zhengwei Wan, Xiaoming Zeng, Lijing Yan, Shuxing Wu, Min Ling\*, Chengdu Liang, **Kwun Nam Hui\***, Zhan Lin\*, “An Ion-Conductive Grafted Polymeric Binder with Practical Loading for Silicon Anode with High Interfacial Stability in Lithium-Ion Batteries”, **Advanced Energy Materials**, 2201197 (2022). [link](#)
78. Jiancong Zhang, Xing Wang, Mengjun Liang, Minxian Han, Jinhong Dai, Qiang Wei, Than Zaw Oo, Su Htike Aung\*, **Kwun Nam Hui\***, Fuming Chen\*, “High-Performance Photoelectrochemical Desalination Based on the Dye-Sensitized Bi<sub>2</sub>O<sub>3</sub> Anode”, **ACS Applied Materials & Interfaces**, 14, 33024-33031 (2022). [link](#)
79. Kaixi Wang, Shuo Wang, Kwan San Hui\*, Haixing Gao, Duc Anh Dinh, Bingchen He, Chengzong Yuan, Chenyang Zha, Zongping Shao\*, Zikang Tang and **Kwun Nam Hui\***, “Synergistically Boosting the Elementary Reactions over Multi-Heterogeneous Ordered Macroporous Mo<sub>2</sub>C/NC-Ru for Highly Efficient Alkaline Hydrogen Evolution”, **Carbon Energy**, 4, 856-866 (2022). [link](#)
80. Chenyang Zha\*, Shuo Wang, Chang Liu, Yuwei Zhao, Bingchen He, Chongguang Lyu, Junfeng Li, Shunping Ji, Shi Chen, Kwan San Hui and **Kwun Nam Hui\***, “Single-Atom Tailoring of Li<sub>2</sub>S to Form Li<sub>2</sub>S<sub>2</sub> for Building Better Lithium-sulfur Batteries”, **Energy Storage Materials**, 47, 79 (2022). [link](#)
81. Yuwei Zhao, Donghai Wu, Tingting Tang, Chongguang Lyu, Junfeng Li, Shunping Ji, Chengzong Yuan, Kwan San Hui, Chenyang Zha\*, **Kwun Nam Hui\*** and Houyang Chen\*, “In situ tailored strategy to remove capping agents from copper sulfide for building better lithium–sulfur batteries”, **Journal of Materials Chemistry A**, accepted 2022 [link](#)
82. Haixing Gao, Siqi Zhu, Yao Kang, Duc Anh Dinh, Kwan San Hui\*, Feng Bin, Xi Fan, Fuming Chen, Azhar Mahmood, Jianxin Geng, Weng-Chon (Max) Cheong\*, **Kwun Nam Hui\***,

- “Zeolitic imidazolate framework-derived Co-Fe@NC for rechargeable hybrid sodium–air battery with a low voltage gap and long cycle life”, *ACS Applied Energy Materials*, 5, 1662-16671 (2022). [link](#)
83. Yao Kang, Shuo Wang, Kwan San Hui\*, Shuxing Wu, Duc Anh Dinh, Xi Fan, Feng Bin, Fuming Chen, Jianxin Geng, Weng-Chon (Max) Cheong\*, and **Kwun Nam Hui\***, “Surface reconstruction establishing Mott-Schottky heterojunction and built-in space-charging effect accelerating oxygen evolution reaction”, *Nano Research*, 15, 2952 (2022). [link](#)
84. Sachin Kumar, Irshad Ahmed Mir, Zubair Ahmad, Kwan San Hui, Duc Anh Dinh, Ling Zhu\*, **Kwun Nam Hui\*** and Jae-Jin Shim\*, “Microflowers of Sn-Co-S derived from ultra-thin nanosheets for supercapacitor applications”, *Journal of Energy Storage*, 49, 104084 (2022). [link](#)
85. Jiancong Zhang, Karthick Ramalingam, Qiang Wei, Kwan San Hui, Su Htike Aung, **Kwun Nam Hui**, Fuming Chen\*, “Stable and efficient self-sustained photoelectrochemical desalination based on CdS QDs/BiVO<sub>4</sub> heterostructure”, *Chemical Engineering Journal*, 429, 132168 (2022). [link](#)
86. Shunping Ji, Chunyan Song, Junfeng Li, Kwan San Hui\*, Wenjun Deng, Shuo Wang, Haifeng Li, Duc Anh Dinh, Xi Fan, Shuxing Wu, Jintao Zhang, Fuming Chen, Zongping Shao\*, and **Kwun Nam Hui\***, “Metal phosphides embedded with in situ-formed metal phosphate impurities as buffer materials for high-performance potassium-ion batteries”, *Advanced Energy Materials*, 2101413 (2021). [link](#)
87. Junfeng Li, Kwan San Hui\*, Shunping Ji, Chenyang Zha, Chengzong Yuan, Duc Anh Dinh, Feng Bin, Xi Fan, Fuming Chen, Zongping Shao\*, and **Kwun Nam Hui\***, “Electrodeposition of dendrite-free 3D Al anode for improving cycling of aluminum-graphite battery”, *Carbon Energy*, 4, 155-169 (2022). [link](#)
88. Juncheng Qiu, Shuxing Wu\*, Yajun Yang, Huayan Xiao, Xiujuan Wei, Bingkai Zhang, **Kwun Nam Hui**, Zhan Lin\*, “Aqueous Supramolecular Binder for a Lithium–Sulfur Battery with Flame-Retardant Property”, *ACS Applied Materials & Interfaces*, 13, 55092-55101 (2021). [link](#)
89. Liang Ma, Zhibin Li, Jinliang Li\*, Yao Dai, Chen Qian, Yaofeng Zhu, Hao Wang, **Kwun Nam Hui**, Likun Pan, Mohammed A. Amin, Yusuke Yamauchi\* and Wenjie Mai\*, “Phytic acid-induced nitrogen configuration adjustment of active nitrogen-rich carbon nanosheets for high-performance potassium-ion storage”, *Journal of Materials Chemistry A*, 9, 25445-25452 (2021). [link](#)
90. Shang Chen, Kangjia Tao, Xin Chen, Yongqiang Meng, Manyun Wang, Ji Zhou, Chao Chen, Yulin Wang, **Kwun Nam Hui**, Christopher W Bielawski, Jianxin Geng\*, “Regulating Lithium Plating and Stripping by Using Vertically Aligned Graphene/CNT Channels Decorated with ZnO Particles”, *Chemistry–A European Journal*, 27, 15706-15717 (2021). [link](#)
91. Cheng Liu, Running Kang, Feng Bin\*, Xiaolin Wei, **Kwun Nam Hui**, Saravanan Kasipandi, Kwan San Hui\*, “Insights on Copper, Manganese, and Nickel/ZSM-5 catalytic mechanisms for nitric oxides selective reduction with ammonia”, *Carbon Resources Conversion*, 5, 15-25 (2022). [link](#)
92. Zhenhua Yao, Lei Li, Xuguang Liu, Kwun Nam Hui, Ling Shi, Furong Zhou, Maocong Hu\*, Kwan San Hui\*, “Mechanistic insights into NO–H<sub>2</sub> reaction over Pt/boron-doped graphene catalyst”, *Journal of Hazardous Materials*, 406, 124327 (2021). [link](#)
93. Running Kang, Pandong Ma, Junyao He, Huixin Li, Feng Bin\*, Xiaolin Wei, Baojuan Dou, **Kwun Nam Hui**, Kwan San Hui\*, “Transient behavior and reaction mechanism of CO catalytic ignition over a CuO–CeO<sub>2</sub> mixed oxide”, *Proceedings of the Combustion Institute*, 38, 6493-6501 (2021). [link](#)

94. Xiaodan Li, Zhibin Liu, Jinliang Li\*, Hang Lei, Wenchen Zhuo, Wei Qin, Xiang Cai, **K.N. Hui**, Likun Pan, Wenjie Mai\*, “Insights on the mechanism of Na-ion storage in expanded graphite anode”, **Journal of Energy Chemistry**, 53, 56-62 (2021). [Link](#)
95. Duc Anh Dinh\*, Tuan Loi Nguyen, Tran Viet Cuong, Kwan San Hui, Trung Hieu Bui, Shuxing Wu, **Kwun Nam Hui\***, “Defect-Free MoS<sub>2</sub>-Flakes/Amorphous-Carbon Hybrid as an Advanced Anode for Lithium-Ion Batteries”, **Energy Fuels**, 35, 3459-3468 (2021). [link](#)
96. Sachin Kumar, Irshad Ahmed Mir, Lu Qi Xiao, Ling Zhu\*, **Kwun Nam Hui**, “Fabrication of broccoli-like 3D nanoflowers of SnS with excellent supercapacitive performance”, **Journal of Alloys and Compounds**, 852, 156764 (2021). [link](#)
97. Jingyun Ma\*, Mengdi Xing, Longwei Yin\*, Kwan San Hui\*, **Kwun Nam Hui**, “Porous hierarchical TiO<sub>2</sub>/MoS<sub>2</sub>/RGO nanoflowers as anode material for sodium ion batteries with high capacity and stability”, **Applied Surface Science**, 536, 147735 (2021). [link](#)
98. Kaixiang Shen, Qiang Wei, Xin Wang, Qiang Ru, Xianhua Hou\*, Guannan Wang\*, Kwan San Hui, Jiadong Shen, **Kwun Nam Hui\***, Fuming Chen\*, “The Electro-catalytic Desalination with CO<sub>2</sub> Reduction and O<sub>2</sub> Evolution”, **Nanoscale**, 13, 12157-12163 (2021). [link](#)
99. Juanyong Wan, Yonggao Xia, Junfeng Fang\*, Zhiguo Zhang\*, Bingang Xu, Jinzhao Wang, Ling Ai, Weijie Song, **Kwun Nam Hui**, Xi Fan\*, Yongfang Li, “Solution-Processed Transparent Conducting Electrodes for Flexible Organic Solar Cells with 16.61% Efficiency”, **Nano-Micro Letters**, 13, 44 (2021). [link](#)
100. Juanyong Wan, Rongjiang Wen, Yonggao Xia\*, Mingzhi Dai, Huihui Huang\*, Lingwei Xue, Zhiguo Zhang, Junfeng Fang, Kwun Nam Hui, Xi Fan\*, “All annealing-free solution-processed highly flexible organic solar cells,” **Journal of Materials Chemistry A**, 9, 5425-5433 (2021). [link](#)
101. Shuo Wang, Lei Li\*, Kwan San Hui\*, Feng Bin, Wei Zhou, Xi Fan, E Zalnezhad, Jing Li\*, **Kwun Nam Hui\***, “Computational Screening of Single Atoms Anchored on Defective Mo<sub>2</sub>CO<sub>2</sub> MXene Nanosheet as Efficient Electrocatalysts for the Synthesis of Ammonia” **Advanced Engineering Materials**, 23, 2100405 (2021). [link](#)
102. Junqin Huang, Zihao Teng, Running Kang, Feng Bin\*, Xiaolin Wei, Qinglan Hao, **Kwun Nam Hui**, Kwan San Hui, Baojuan Dou\*, “Study on activity, stability limit and reaction mechanism of CO self-sustained combustion over the LaMnO<sub>3</sub>, La<sub>0.9</sub>Ce<sub>0.1</sub>MnO<sub>3</sub> and La<sub>0.9</sub>Sr<sub>0.1</sub>MnO<sub>3</sub> perovskite catalysts using sugar agent”, **Fuel**, 292, 120289 (2021). [link](#)
103. Running Kang, Junyao He, Feng Bin\*, Baojuan Dou, Qinglan Hao, Xiaolin Wei, **Kwun Nam Hui**, Kwan San Hui\*, “Alkali metal-resistant mechanism for selective catalytic reduction of nitric oxide over V<sub>2</sub>O<sub>5</sub>/HWO catalysts”, **Fuel**, 304, 121445 (2021). [link](#)
104. Chuanyi Guo, Chaofa Chen, Jiaying Lu, Du Fu, Cheng-Zong Yuan, Xi-Lin Wu\*, **Kwun Nam Hui**, Jianrong Chen\*, “Stable and recyclable Fe<sub>3</sub>C@CN catalyst supported on carbon felt for efficient activation of peroxymonosulfate”, **Journal of Colloid and Interface Science**, 599, 219-226 (2021). [link](#)
105. Jinhong Dai, Mingzhi Huang, Kwan San Hui, YW Denis, Dongliang Yan, **Kwun Nam Hui**, Swee Ching Tan, Liguozhang, Fuming Chen\*, “Redox flow desalination based on the temperature difference as a driving force”, **Chemical Engineering Journal**, 416, 127716 (2021). [link](#)
106. Yajun Yang, Juncheng Qiu, Lei Cai, Canbin Liu, Shuxing Wu\*, Xiujuan Wei, Dong Luo, Bingkai Zhang, Xulai Yang\*, **Kwun Nam Hui**, Jing Liu, Zhan Lin\*, “Water-Soluble Trifunctional Binder for Sulfur Cathodes for Lithium–Sulfur Battery”, **ACS Applied Materials and Interfaces**, 12, 33066-33074 (2021). [link](#)
107. Junyao He, Running Kang, Xiaolin Wei, Junqin Huang, Feng Bin\*, **Kwun Nam Hui**, Kwan San Hui, Dongyin Wu\*, “Comparative study of M Ce<sub>0.75</sub>Zr<sub>0.25</sub>O<sub>y</sub> (M = Cu, Mn, Fe) catalysts for selective reduction of NO by CO: Activity and reaction pathways”, **Carbon Resources Conversion**, 4, 205-213 (2021). [link](#)

108. Xueqing Yu, Junpo Guo, Bo Li, Jincheng Xu, Peng Gao\*, Kwan San Hui, **Kwun Nam Hui\***, Huaiyu Shao\*, “Sub-Nanometer Pt Clusters on Defective NiFe LDH Nanosheets as Trifunctional Electrocatalysts for Water Splitting and Rechargeable Hybrid Sodium–Air Batteries”, **ACS Applied Materials and Interfaces**, 13, 26891-26903 (2021). [link](#)
109. Y. Kang, S. Wang, Siqi Zhu, Haixing Gao, K.S. Hui\*, C.Z. Yuan, H. Yin, F. Bin, X.L. Wu, W.J. Mai, L. Zhu, M.C. Hu, F. Liang\*, F. Chen\*, **Kwun Nam Hui\***, “Iron-modulated Nickel Cobalt Phosphide Embedded in Carbon to Boost Power Density of Hybrid Sodium–air Battery,” **Applied Catalysis B: Environmental**, 285, 119786 (2021). [link](#)
110. Y. Kang, S. Wang, K.S. Hui\*, H. Li, F. Liang, X. Wu, Q. Zhang, W. Zhou, L. Chen\*, F. Chen\*, **K.N. Hui\***, “[Fe(CN)6] Vacancy Boosting Oxygen Evolution Activity of Co-based Prussian Blue Analogues for Hybrid Sodium-air Battery,” **Materials Today Energy**, 100572 (2020). [link](#)
111. X. Yu, Y. Kang, S. Wang, K.S. Hui, **K.N. Hui\***, H. Zhao, J. Li, B. Li, J. Xu, L. Chen\*, H. Shao\*, “Integrating PtNi Nanoparticles on NiFe Layered Double Hydroxide Nanosheets as Bifunctional Catalyst for Hybrid Sodium-Air Batteries,” **Journal of Materials Chemistry A**, 8, 16355-16365 (2020). [link](#)
112. Shuo Wang, Lei Li\*, Jing Li, Chengzong Yuan, Yao Kang, K.S. Hui\*, Jintao Zhang, Feng Bin, Xi Fan, Fuming Chen\* and **Kwun Nam Hui\***, “High-Throughput Screening of Nitrogen-Coordinated Bimetal Catalysts for Multielectron Reduction of CO<sub>2</sub> to CH<sub>4</sub> with High Selectivity and Low Limiting Potential”, **The Journal of Physical Chemistry C**, 125, 7155-7165, (2021). [link](#)
113. Ting Kang, Bei Li, Qinglan Hao, Weijie Gao, Feng Bin, **Kwun Nam Hui**, Dong Fu\*, Baojuan Dou\*, “Efficient Hydrogen Peroxide (H<sub>2</sub>O<sub>2</sub>) Synthesis by CaSnO<sub>3</sub> via Two-Electron Water Oxidation Reaction”, **ACS Sustainable Chemistry & Engineering**, 8, 15005-15012 (2020). [link](#)
114. Y. Kang, S. Wang, Y. Liu, K.S. Hui\*, H. Li, K.W. Ng, F. Liang\*, J. Geng, X. Hong, W. Zhou\*, **K.N. Hui\***, “Unveiling the Origin of Catalytic Sites of Pt Nanoparticles Decorated on Oxygen Deficient Vanadium doped Cobalt Hydroxide Nanosheet for Hybrid Sodium–air Battery,” **ACS Applied Energy Materials**, 3, 7464–7473 (2020). [link](#)
115. Dongni Sun, Xiaoting Hong\*, Zhonghua Cui, Yingying Du, KS Hui, Enhao Zhu, Keming Wu and **Kwun Nam Hui**, “Treatment of landfill leachate using magnetically attracted zero-valent iron powder electrode in an electric field”, **Journal of Hazardous Materials**, 388, 121768 (2020). [link](#)
116. Dongni Sun, Xiaoting Hong\*, Keming Wu, K.S. Hui, Yingying Du, **Kwun Nam Hui**, “Simultaneous removal of ammonia and phosphate by electrooxidation and electrocoagulation using RuO<sub>2</sub>-IrO<sub>2</sub>/Ti and microscale zero-valent iron composite electrode”, **Water Research**, 169, 115239 (2020). [link](#)
117. Xiaodan Li, Zhibin Liu, Jinliang Li\*, Hang Lei, Wenchen Zhuo, Wei Qin, Xiang Cai, **Kwun Nam Hui**, Likun Pan, Wenjie Mai\*, “Insights on the mechanism of Na-ion storage in expanded graphite anode”, **Journal of Energy Chemistry**, 53, 56-62 (2020). [link](#)
118. Junpeng Xie, Jinliang Li\*, Xiaodan Li, Hang Lei, Wenchen Zhuo, Xibo Li, Guo Hong, **Kwun Nam Hui**, Likun Pan, Wenjie Ma\*, “Ultrahigh “Relative Energy Density” and Mass Loading of Carbon Cloth Anodes for K-Ion Batteries”, **Chinese Chemical Society**, 2 791-799 (2020). [link](#)
119. Mengjun Liang, Kuang Feng, Ramalingam Karthick, Liguozhang, Yumeng Shi, Kwan San Hui, **Kwun Nam Hui\***, Feng Jiang\* and Fuming Chen\*, “Photocathode-assisted redox flow desalination”, **Green Chemistry**, 22, 4133 (2020). [link](#)
120. Shude Liu, Y. Yin, K.S. Hui, Y.T. Chun, J.M. Kim, **Kwun Nam Hui\***, Lipeng Zhang\* and S.C. Jun\*, “Phosphorus Regulated Cobalt Oxide@Nitrogen-Doped Carbon Nanowires for Flexible Quasi-Solid-State Supercapacitors”, **Small**, 16, 1906458 (2020).

121. B. J. Doum R.Z. Zhao, N.N. Yan, C.C. Zhao, Q.L. Hao, K.S. Hui and **Kwun Nam Hui**, “A facilitated synthesis of hierarchically porous Cu–Ce–Zr catalyst using bacterial cellulose for VOCs oxidation”, **Materials Chemistry and Physics**, 237, 121852 (2019). [Link](#)
122. J.Y. Dong, J. C. Xu, **Kwun Nam Hui**, Y. Yang, S. C. Su, L. Li, Z. T. Zhang, K.W. Ng\*, S.P. Wang\* and Z.K. Tang\*, “Homogeneous Core/Shell NiMoO<sub>4</sub>@ NiMoO<sub>4</sub> and Activated Carbon for High Performance Asymmetric Supercapacitor”, **Nanomaterials**, 9, 1033 (2019). [Link](#)
123. Junpeng Ma, Jingbiao Fan, Shang Chen, Xinyue Yang, **Kwun Nam Hui**, Hongwen Zhang, Christopher W. Bielawski, and Jianxin Geng\*, “Covalent Confinement of Sulfur Copolymers onto Graphene Sheets Affords Ultrastable Lithium–Sulfur Batteries with Fast Cathode Kinetics”, **ACS Applied Materials & Interfaces**, 11, 13234 (2019). [Link](#)
124. Shude Liu, Ying Yin, Dixing Ni, K.S. Hui, Ming Ma, Sewon Park, **Kwun Nam Hui\***, Chuying Ouyang\*, and Seong Chan Jun\*, “New Insight into the Effect of Fluorine Doping and Oxygen Vacancies on Electrochemical Performance of Co<sub>2</sub>MnO<sub>4</sub> for Flexible Quasi-Solid-State Asymmetric Supercapacitors”, **Energy Storage Materials**, 22, 384-396 (2019). [Link](#)
125. Shude Liu, Y. Yin, Dixing Ni, K.S. Hui, **Kwun Nam Hui\***, C.Y. Ouyang\* and S.C. Jun\*, “Phosphorous-Containing Oxygen-Deficient Cobalt Molybdate as an Advanced Electrode Material for Supercapacitors”, **Energy Storage Materials**, 19, 186-196 (2019). [Link](#)
126. Shude Liu, K.S. Hui, Musheng Wu, Y. Yin, **Kwun Nam Hui\***, C.Y. Ouyang\* and S.C. Jun\*, “Phosphorus-Mediated MoS<sub>2</sub> Nanowires as a High-Performance Electrode Material for Quasi-Solid-State Sodium-Ion Intercalation Supercapacitors”, **Small**, 15, 1803984 (2019). [link](#)  
[Back Cover](#)
127. Chi-Him A. Tsang, **Kwun Nam Hui\*** and K.S. Hui\*, “Influence of Pd<sub>1</sub>Pt<sub>x</sub> alloy NPs on graphene aerogel/nickel foam as binder-free anodic electrode for electrocatalytic ethanol oxidation reaction”, **Journal of Power Sources**, 413, 98-106 (2019). [Link](#)
128. S.X. Wu, C.B. Liu, D.A. Dinh, K.S. Hui\*, **Kwun Nam Hui\***, J.M. Yun and K.H. Kim\*, “Three-Dimensional Self-Standing and Conductive MnCO<sub>3</sub>@Graphene/CNT Networks for Flexible Asymmetric Supercapacitors”, **ACS Sustainable Chemistry & Engineering**, 7, 9763-9770 (2019). [Link](#)
129. S. Liu, Y. Yin, K.S. Hui, **Kwun Nam Hui\***, S.C. Lee, and S.C. Jun\*, “Nickel hydroxide/chemical vapor deposition-grown graphene/nickel hydroxide/nickel foam hybrid electrode for high performance supercapacitors”, **Electrochimica Acta**, 297, 479-487 (2019). [Link](#)
130. S.X. Wu, H. Guo, K.S. Hui\*, and **Kwun Nam Hui\***, “Rational Design of Integrated CuO@CoxNi<sub>1-x</sub>(OH)<sub>2</sub> Nanowire Arrays on Copper Foam for High-Rate and Long-Life Supercapacitors”, **Electrochimica Acta**, 295, 759-768 (2019). [Link](#)
131. L. Zhang, **Kwun Nam Hui\***, K.S. Hui\*, and S.W. Or\*, “3D Heterostructured Cobalt Oxide@Layered Double Hydroxide Core-shell Networks on Nickel Foam for High-performance Hybrid Supercapacitor”, **Dalton Transactions**, 48, 150-157 (2019). [Link](#)
132. X. Hong\*, E. Zhu, Z. Ye, K.S. Hui, and **Kwun Nam Hui**, “Enhanced Phosphate Removal under an Electric Field via Multiple Mechanisms on MgAl-LDHs/AC Composite Electrode”, **Journal of Electroanalytical Chemistry**, 836, 16-23 (2019). [Link](#)
133. E. Zhu, X. Hong\*, Z. Ye, K.S. Hui, and **Kwun Nam Hui**, “Influence of various experimental parameters on the capacitive removal of phosphate from aqueous solutions using LDHs/AC composite electrodes”, **Separation and Purification Technology**, 215, 454-46, (2019). [Link](#)
134. X. Chen, Y. Heng, H. Li, S. Bae, A. Li, Z. Wang, K.S. Hui\*, **Kwun Nam Hui\***, and E. Zalenezhad\*, “Electrodeposited Nickel Aluminum-layered double hydroxide on Co<sub>3</sub>O<sub>4</sub> as binder-free electrode for supercapacitor”, **Journal of Materials Science: Materials in Electronics**, 30, 2419-2430 (2019). [Link](#)

135. Shude Liu, Y. Yin, K.S. Hui, **Kwun Nam Hui\***, Su Chan Lee, and S.C. Jun\*, “High-Performance Flexible Quasi-Solid-State Supercapacitors Realized by Molybdenum Dioxide@ Nitrogen-Doped Carbon and Copper Cobalt Sulfide Tubular Nanostructures”, **Advanced Science**, 5, 1800733 (2018). ([Link](#))
136. Shude Liu, K.S. Hui\* and **Kwun Nam Hui\***, H.F. Li, K.W. Ng, J.C. Xu, Z.K. Tang and S.C. Jun\*, “An asymmetric supercapacitor with excellent cycling performance realized by hierarchical porous NiGa<sub>2</sub>O<sub>4</sub> nanosheets”, **Journal of Materials Chemistry A**, 4, 19046-19053 (2017). ([Link](#))
137. Shude Liu, Dixing Ni, Hai-Feng Li, **Kwun Nam Hui\***, C.Y. Ouyang\*, and S.C. Jun\*, “Effect of cation substitution on the pseudocapacitive performance of spinel cobaltite MCo<sub>2</sub>O<sub>4</sub> (M= Mn, Ni, Cu, and Co)”, **Journal of Materials Chemistry A**, 6, pp. 10674-10685 (2018). ([Link](#))
138. S.X. Wu, K.S. Hui\* and **Kwun Nam Hui\***, “Carbon nanotube@manganese oxide nanosheet core-shell structure encapsulated within reduced graphene oxide film for flexible all-solid-state asymmetric supercapacitors”, **Carbon**, 132, 776-784 (2018). ([Link](#))
139. Feng Liang, Xuechao Qiu, Qingkai Zhang, Yao Kang\*, Alicia Koo, Katsuro Hayashi, Kunfeng Chen, Dongfeng Xue, **Kwun Nam Hui**, Hossein Yadegari, Xueliang Sun\*, “A liquid anode for rechargeable sodium-air batteries with low voltage gap and high safety”, **Nano Energy**, 49, 574-579 (2018). ([Link](#))
140. Lei Li, K.S. Hui\*, **Kwun Nam Hui\***, Tengfei Zhang, Jianjian Fu, and Young-Rae Cho\*, “High-performance solid-state flexible supercapacitor based on reduced graphene oxide/hierarchical core-shell Ag nanowire@ NiAl layered double hydroxide film electrode”, **Chemical Engineering Journal**, 348, 338-349 (2018). ([Link](#))
141. H. Li, F. Musharavati\*, E. Zalenezhad, X. Chen, **Kwun Nam Hui\***, and K.S. Hui\*, “Electrodeposited Ni-Co layered double hydroxides on titanium carbide as a binder-free electrode for supercapacitors”, **Electrochimica Acta**, 261, 178-187 (2018) ([Link](#))
142. Lei Li, K.S. Hui\*, **Kwun Nam Hui\*** and Young-Rae Cho\*, “Ultrathin petal-like NiAl layered double oxide/sulfide composites as an advanced electrode for high-performance asymmetric supercapacitors”, **Journal of Materials Chemistry A**, 4, 19687-190696 (2017). ([Link](#))
143. S.X. Wu, K.S. Hui\*, **Kwun Nam Hui\*** and K.H. Kim\*, “Electrostatic-induced Assembly of Graphene-encapsulated Carbon@Nickel-Aluminum Layered Double Hydroxide Core-Shell Spheres Hybrid Structure for High-energy and High-power-density Asymmetric Supercapacitor”, **ACS Applied Materials & Interfaces**, 9, 1395-1406 (2017). ([Link](#))
144. S.X. Wu, K.S. Hui\*, **Kwun Nam Hui\***, Je Moon Yun and K.H. Kim\*, “A novel approach to fabricate carbon-sphere-intercalated holey graphene electrode for high-energy-density electrochemical capacitors”, **Chemical Engineering Journal**, 317, 461 (2017). ([Link](#))
145. Luojiang Zhang, R. Chen, **Kwun Nam Hui\***, K.S. Hui\* and Haiwoon Lee, “Hierarchical ultrathin NiAl layered double hydroxide nanosheet arrays on carbon nanotube paper as advanced hybrid electrode for high performance hybrid capacitors”, **Chemical Engineering Journal**, 325, 554-563 (2017). ([Link](#))
146. M. Hu, Z. Yao, **Kwun Nam Hui\*** and K.S. Hui\*, “Novel mechanistic view of catalytic ozonation of gaseous toluene by dual-site kinetic modeling”, **Chemical Engineering Journal**, 308, 710-718 (2017). ([Link](#))
147. S.X. Wu, K.S. Hui, **Kwun Nam Hui**, J.M. Yun and K.H. Kim\*, “Silver particle-loaded nickel oxide nanosheet arrays on nickel foam as advanced binder-free electrodes for aqueous asymmetric supercapacitors”, **RSC Advances**, 3, 41771-41778 (2017). ([Link](#))
148. X.T. Hong\*, C.R. Fang, K.S. Hui, **Kwun Nam Hui**, H.F. Zhuang, W.P. Liu and S.D. Shan\*, “Influence of interfering anions on Cu<sup>2+</sup> and Zn<sup>2+</sup> ions removal on chestnut outer shell-derived hydrochars in aqueous solution”, **RSC Advances**, 3, 51199-51205 (2017). ([Link](#))

149. Hui Li, F. Musharavati, Jingtao Sun, Fadi Jaber, Erfan Zalnezhad\*, **Kwun Nam Hui\***, and K. S. Hui\*, “Investigation of the Electrochemical Properties of CoAl-Layered Double Hydroxide/Ni(OH)<sub>2</sub>”, **Journal of The Electrochemical Society**, 165 (2) A407-A415 (2018). ([Link](#))
150. Hong Zhao, Caina Su, **Kwun Nam Hui\*** and K.S. Hui\*, “Facile Synthesis of Co-N<sub>4</sub>-Doped Mesoporous Carbon for Oxygen Reduction Reaction”, **Journal of The Electrochemical Society**, 164, F1-F6 (2017). ([Link](#))
151. Lei Li, Jianjian Fu, K.S. Hui\*, **Kwun Nam Hui\***, and Y.R. Cho\*, “Controllable preparation of 2D nickel aluminum layered double hydroxide nanoplates for high performance supercapacitors”, **Journal of Materials Science: Materials in Electronics**, 29, 7493-17502, (2018). ([Link](#))
152. Mingyu Zhang, K. S. Hui\*, G. F. Gong, **Kwun Nam Hui\***, and Li Zhu Liu, “Pretreatment of lignocellulosic wheat straw in ethanol-water co-solvents”, **Cellulose Chemistry and Technology**, 51, pp. 425-432 (2017).
153. Chi-Him A. Tsang, **Kwun Nam Hui\***, K.S. Hui\*, “Electrooxidation of glucose by binder-free bimetallic Pd1Pt<sub>x</sub>/graphene aerogel/nickel foam composite electrodes with low metal loading in basic medium”, **Electrochimica Acta**, 258, pp. 371-379 (2017). ([Link](#))
154. Lei Li, K.S. Hui\*, **Kwun Nam Hui\***, Q.X. Xia, Jianjian Fu and Young-Rae Cho\*, “Facile synthesis of NiAl layered double hydroxide nanoplates for high performance asymmetric supercapacitor”, **Journal of Alloys and Compounds**, 721, 803-812 (2017). ([Link](#))
155. Wonwoo Jeong, C.L. Yin, K.S. Hui\*, **Kwun Nam Hui\***, Young-Raw Cho and Kyung Mox Cho\*, “Enhanced electrochemical reduction of hydrogen peroxide by Co<sub>3</sub>O<sub>4</sub> nanowire electrode”, **Journal of Materials Science- Materials in Electronics**, 28, 16672-16678 (2017). ([Link](#))
156. Wonwoo Jeong, K.S. Hui\*, **Kwun Nam Hui\***, Young-Raw Cho\* and Kyung Mox Cho, “Tunable emission properties of CdSe/CdS quantum dots by Ce”, **Journal of Materials Science- Materials in Electronics**, 28, 17331-17337 (2017). ([Link](#))
157. **Kwun Nam Hui\***, K.S. Hui\*, Z.K. Tang, V.V. Jadhav and X.Q. Xia, “Hierarchical chestnut-like MnCo<sub>2</sub>O<sub>4</sub> nanoneedles grown on nickel foam as binder-free electrode for high energy density asymmetric supercapacitors”, **Journal of Power Sources**, 330, 195-203 (2016). ([Link](#))
158. S.X. Wu, K.S. Hui\*, **Kwun Nam Hui\*** and K.H. Kim\*, “Ultrathin porous NiO nanoflake arrays on nickel foam as advanced electrode for high performance asymmetric supercapacitors”, **Journal of Materials Chemistry A**, 4, 9113-9123 (2016). ([Link](#))
159. S.Q. Zhu, Q.L. Chen, Y.Y. Shi, Z.Y. Chen, R.Q. Bao, L. Zhou, L.R. Hou, **Kwun Nam Hui\*** and C.Z. Yuan\*, “Lignite-derived mesoporous N- and O-enriched carbon sheet: a low-cost promising electrode for high-performance supercapacitors”, **Journal of Solid State Electrochemistry**, 20, 713-723 (2016). ([Link](#))
160. Luojiang Zhang, **Kwun Nam Hui\***, K.S. Hui\* X. Chen, R. Chen and Haiwoon Lee, “Role of graphene on hierarchical flower-like NiAl layered double hydroxide-nickel foam-graphene as binder-free electrode for high-rate hybrid supercapacitor”, **International Journal of Hydrogen Energy**, 41, 9443-9453 (2016). ([Link](#))
161. Luojiang Zhang, **Kwun Nam Hui\***, K.S. Hui\* and Haiwoon Lee, “High-performance hybrid supercapacitor with 3D hierarchical porous flower-like layered double hydroxide grown on nickel foam as binder-free electrode”, **Journal of Power Sources**, 318, 76-85 (2016). ([Link](#))
162. Sang Hoon Kim, **Kwun Nam Hui**, Yong-Jin Kim, Tae-Soo Lim, Dong-Yeol Yang, Ki Bong Kim, Young Ja Kim, Gwang Joo Jang, Sangsun Yang, “Fabrication of pre-alloyed Al–Li powders with high Li content via thermal dehydrogenation of LiH and rapid solidification process”, **Materials & Design**, 94, 159-165 (2016). ([Link](#))

163. Shude Liu, K.S. Hui\*, **Kwun Nam Hui\***, “Flower-Like Copper Cobaltite Nanosheets on Graphite Paper as High-Performance Supercapacitor Electrodes and Enzymeless Glucose Sensors”, **ACS Applied Materials & Interfaces**, 8, 3258-3267 (2016). ([Link](#))
164. Shude Liu, K.S. Hui\*, **Kwun Nam Hui\***, Je Moon Yun, and Kwang Ho Kim, “Vertically Stacked Bilayer  $\text{CuCo}_2\text{O}_4/\text{MnCo}_2\text{O}_4$  Heterostructures on Functionalized Graphite Paper for High-Performance Electrochemical Capacitors”, **Journal of Materials Chemistry A**, 4, pp. 8061-8071 (2016). ([Link](#)) **2016 Journal of Materials Chemistry A HOT Papers**
165. Hui Hua, Sijia Liu, Zhiyi Chen, Ruiqi Bao, Yaoyao Shi, Linrui Hou, Gang Pang, **Kwun Nam Hui\***, Xiaogang Zhang, and Changzhou Yuan\*, “Self-sacrifice Template Formation of Hollow Hetero- $\text{Ni}_7\text{S}_6/\text{Co}_3\text{S}_4$  Nanoboxes with Intriguing Pseudo-capacitance for High-performance Electrochemical Capacitors”, **Scientific Reports**, 6, 20973 (2016). ([Link](#))
166. Shude Liu, K.S. Hui\*, **Kwun Nam Hui\***, Vijaykumar V. Jadhav, Qi Xun Xia, Je Moon Yun, Y.R. Cho, Rajaram S. Mane and Kwang Ho Kim, “Facile Synthesis of Microsphere Copper Cobalt Carbonate Hydroxides Electrode for Asymmetric Supercapacitor”, **Electrochimica Acta**, 188, 898-908 (2016). ([Link](#))
167. Luojiang Zhang, **Kwun Nam Hui\***, K.S. Hui\* and Haiwoon Lee, “Facile synthesis of porous CoAl-layered double hydroxide/graphene composite with enhanced capacitive performance for supercapacitors”, **Electrochimica Acta**, 186, 522-529 (2015). ([Link](#))
168. Shude Liu, K.S. Hui\* and **Kwun Nam Hui\***, “1D Hierarchical  $\text{MnCo}_2\text{O}_4$  Nanowire@ $\text{MnO}_2$  Sheet Core-Shell Arrays on Graphite Paper as Superior Electrodes for Asymmetric Supercapacitors”, **CHEMNANOMAT**, 1, 593-602 (2015). (**Back Cover**) ([Link](#))
169. Manohar K. Zate, Shoyeb Mohamad F. Shaikn, Vijaykumar V. Jadhav, Kailas K. Tehare, S.S. Kolekar, Rajaram S. Mane, Mu. Naushad, B.N. Pawar and **Kwun Nam Hui**, “Synthesis and electrochemical supercapacitive performance of nickel-manganese ferrite composite films”, **Journal of Analytical and Applied Pyrolysis**, 116, 177-182 (2015). ([Link](#))
170. S.X. Wu, K.S. Hui\* and **Kwun Nam Hui\***, “1D Core-Shell Architecture Composed of Silver Nanowire@Hierarchical Nickel-Aluminum Layered Double Hydroxide Nanosheet As advanced Electrode Materials for Pseudocapacitor”, **Journal of Physical Chemistry C**, 119, 23358-23365 (2015). ([Link](#))
171. Q.X. Xia, K.S. Hui, **Kwun Nam Hui\***, S.D. Kim, J.H. Lim, S.Y. Choi, L.J. Zhang, Rajaram S. Mane, J.M. Yun and K.H. Kim\*, “Facile Synthesis of Manganese Carbonate Quantum Dot/Ni  $(\text{HCO}_3)_2\text{-MnCO}_3$  Composites as Advanced Cathode Materials for High Energy Density Asymmetric Supercapacitors”, **Journal of Materials Chemistry A**, 3, 22102-22117 (2015).([Link](#))
172. L. Ren\*, **Kwun Nam Hui\***, K.S. Hui\*, Y. Liu, X. Qi, J. Zhong, Y. Du and J. Yang, “3D hierarchical porous graphene aerogel with tunable meso-pores on graphene nanosheets for high performance energy storage”, **Scientific Reports**, 5, 144229 (2015). ([Link](#))
173. Vijaykumar V. Jadhav, Manohar K. Zate, Shude Liu, Mu. Naushad, Rajaram S. Mane\*, **Kwun Nam Hui\*** and Sung-Hwan Han, “Mixed-phase bismuth ferrite nanoflake electrodes for supercapacitor application”, **Applied Nanoscience**, 6, 511-519 (2016). ([Link](#)).
174. Wei Zhou\*, Q.H. Wang, Q.F. Qiu, Y. Tang, J.W. Tu, K.S. Hui and **Kwun Nam Hui**, “Heat and mass transfer characterization of porous copper fiber sintered felt as catalyst support for methanol steam reforming”, **Fuel**, 145, 136-142 (2015). ([Link](#))
175. R. Wu, R. Chen\*, H. Wang, Z.B. Wang, X. Zhu, Q. Liao, K.S. Hui and **Kwun Nam Hui**, “Numerical study on catalytic combustion of methane with ozone using Pd-exchanged zeolite X”, **Science China Chemistry**, 58, 899-904 (2015). ([Link](#))
176. A. Al-Osta, V.V. Jadhav, N.A. Saad, R.S. Mane\*, M. Naushad, **Kwun Nam Hui\*** and S.H. Han, “Diameter-dependent electrochemical supercapacitive properties of anodized titanium oxide nanotubes”, **Scripta Materialia**, 104, 60-63 (2015). ([Link](#))

177. A. Al-Osta, V.V. Jadhav, M.K. Zate, R.S. Mane\*, **Kwun Nam Hui** and S.H. Han, “Electrochemical supercapacitors of anodized-brass-templated NiO nanostructured electrodes”, **Scripta Materialia**, 99, 29-32 (2015). ([Link](#))
178. C. Esther Jeyanthi\*, R. Siddheswaran, Pushpendra Kumar, Jai Singh, **K.N. Hui**, K.S. Hui and K Rajarajan, “Synthesis, characterization and spectroscopic analysis of Er-doped ceria ( $\text{Ce}_{0.9}\text{Er}_{0.1}\text{O}_{1.95}$ ) electrolyte for solid oxide fuel cells”, **Energy and Environment Focus**, 3, 196-201 (2014).([Link](#))
179. Chi-Him A. Tsang, **K.N. Hui\***, K.S. Hui\* and L. Ren, “Deposition of Pd/graphene aerogel on nickel foam as a binder-free electrode for direct electro-oxidation of methanol and ethanol”, **Journal of Materials Chemistry A**, 2, 17986-17993 (2014). ([Link](#))
180. H. Zhao, K.S. Hui\* and **K.N. Hui\***, “Synthesis of nitrogen-doped multi-layer graphene from milk powder with melamine and their application to fuel cells”, **Carbon**, 76, 1-9 (2014). ([Link](#)) (#8 of Top 25 Most Downloaded Articles, Oct 2014)
181. V.V. Jadhav, D.V. Shinde, S.A. Patil, M.K. Zate, S. Pawar, A. Al-Osta, R.S. Mane\*, **K.N. Hui\***, K.S. Hui and S.H. Han, “Electrochemical Properties of Anodized Copper Hydroxide Nanostructures”, **Journal of Nanoengineering and Nanomanufacturing**, 4, 168-172 (2014). ([Link](#))
182. Qi Bao, **K.N. Hui\***, K.S. Hui\*, Yi Wang and X.T. Hong, “Hydrothermal self-assembly and supercapacitive behaviors of Co(II) ion-modified graphene aerogels in  $\text{H}_2\text{SO}_4$  electrolyte”, **Materials Research Bulletin**, 56, 92-97 (2014). ([Link](#))
183. X.T. Hong\*, K.S. Hui, Z. Zeng, **K.N. Hui**, L.J. Zhang, M.Y. Mo and M. Li, “Hierarchical nitrogen-doped porous carbon with high surface area derived from endothelium corneum gigeriae galli for high-performance supercapacitor”, **Electrochimica Acta**, 130, 464-469 (2014). ([Link](#))
184. W. Zhou\*, R. Song, X. Pan, Y. Peng, X. Qi, J. Peng, K.S. Hui and **K.N. Hui**, “Fabrication and Impedance Measurement of Novel Metal Dry Bioelectrode”, **Sensors and Actuators A: Physical**, 201, 127-133 (2013). ([Link](#))
185. L. Zhang, J. Wang, J. Zhu, X. Zhang\*, K.S. Hui and **K.N. Hui**, “3D porous layered double hydroxides grown on graphene as advanced electrochemical pseudocapacitor materials”, **Journal of Materials Chemistry A**, 1, 9046-9053 (2013). ([Link](#)) **2013 Journal of Materials Chemistry A Hot Papers**
186. X.H. Wu, X.T. Hong\*, Z.P. Luo, K.S. Hui, H.Y. Chen, J.W. Wu, **K.N. Hui**, L.Z. Li, J.M. Nan and Q.Y. Zhang, “The effects of surface modification on the supercapacitive behaviors of novel mesoporous carbon derived from rod-like hydroxyapatite template”, **Electrochimica Acta**, 89, 400-406 (2013). ([Link](#))
187. X.T. Hong\*, X.H. Wu, M.Y. Mo, Z.P. Luo, K.S. Hui, H.Y. Chen, L.S. Li, **K.N. Hui** and Q.Y. Zhang, “Synthesis and Electrochemical Capacitive Performances of Novel Hierarchically Micro-Meso Porous Carbons Using Microporous Rod-Like Hydroxyapatites as Template”, **Acta Physico-Chimica Sinica**, 29, 298-304 (2013). ([Link](#))
188. L. Ren, K.S. Hui\* and **K.N. Hui\***, “Self-Assembled Free-standing Three-Dimensional Nickel Nanoparticle/Graphene Aerogel for Direct Ethanol Fuel Cells”, **Journal of Materials Chemistry A**, 1, 5689-5694 (2013). ([Link](#))
189. W. Zhou\*, Y. Tang, Q.H. Wang, K.S. Hui, **K.N. Hui**, Z.P. Wan and R. Song, “Optimization of catalyst loading procedure for porous copper fiber sintered felt used in methanol steam reforming microreactor”, **Chemical Engineering & Technology**, 36, 1-9 (2013). ([Link](#))
190. **K.N. Hui\***, Cui-Lei Yin, K.S. Hui\*, J.Y. Lee, D.X. Cao and G.L. Wang, “Electroreduction of  $\text{H}_2\text{O}_2$  by  $\text{Co}_3\text{O}_4$  and  $\text{NiCo}_2\text{O}_4$  nanowires and  $\beta\text{-Ni}(\text{OH})_2$  nanoplates grown on Ni foam”, **Journal of Nanoscience and Nanotechnology**, 12, 3615-3619 (2012). ([Link](#))

191. L. Ren, Y.D. Liu, X. Qi, K.S. Hui, **K.N. Hui**, Z.Y. Huang, J. Li, K. Huang and J.X. Zhong\*, “An Architected TiO<sub>2</sub> Nanosheet with Discrete Integrated Nanocrystalline Subunits and Its Application in Lithium Batteries”, **Journal of Materials Chemistry**, 22, 21513-21518 (2012). ([Link](#))
192. H.T. Hu, **K.N. Hui\***, K.S. Hui\*, S.K. Lee and W. Zhou, “Facile and green method for polystyrene grafted multi-walled carbon nanotubes and their electrorheological characteristics”, **Colloids and Surfaces A: Physicochemical and Engineering Aspects**, 396, 77-181 (2012). ([Link](#))
193. S.K. Lee\*, G. Mogi, Z.L. Li, K.S. Hui, S.K. Lee, **K.N. Hui**, S.Y. Park, Y.J. Ha and J.W. Kim, “Measuring the relative efficiency of hydrogen energy technologies for implementing the hydrogen economy: An integrated fuzzy AHP/DEA approach”, **International Journal of Hydrogen Energy**, 36, I2655-I2663 (2011). ([Link](#))
194. D.W. Kim, J.S. Kim, Y.N. Kim, **K.N. Hui** and HeeSoo Lee\*, “Selective Substitution and Tetragonality by Co-doping of Dysprosium and Thulium on Dielectric Properties of Barium Titanate Ceramics”, **Electronic Materials Letters**, 7, 155-159 (2011). ([Link](#))
195. D.W. Kim, J.S. Kim, **K.N. Hui** and Heesoo Lee\*, “Electrical properties and degradation behavior of Tm<sub>2</sub>O<sub>3</sub> doped barium titanate ceramics for MLCCs”, **Journal of the Korean Crystal Growth and Crystal Technology**, 20, 278-282 (2010). ([Link](#))
196. M. Hu, Z. Yao, **K.N. Hui\*** and K.S. Hui\*, “Novel mechanistic view of catalytic ozonation of gaseous toluene by dual-site kinetic modelling”, **Chemical Engineering Journal**, 308, 710-718 (2017). ([Link](#))
197. **K.N. Hui\***, K.S. Hui\*, X.L. Zhang, Rajaram S Mane\*, Mu Naushad, “Photosensitization of ZnO nanowire-based electrodes using one-step hydrothermally synthesized CdSe/CdS (core/shell) sensitizer”, **Solar Energy**, 125, 125-134 (2016). ([Link](#))
198. Wei Zhou, Wei song Ling, Lian Duan, K.S. Hui and **K.N. Hui**, “Development and tests of loop heat pipe with multi-layer metal foams as wick structure”, **Applied Thermal Engineering**, 94, 324-330 (2016). ([Link](#))
199. Jing Wu, K.S. Hui\*, **K.N. Hui\***, Lei Li, Ho-Hwan Chun and Y.R. Cho\*, “Characterization of Sn-doped CuO thin films prepared by a sol–gel method”, **Journal of Materials Science-Materials in Electronics**, 27, 1719-1724 (2016). ([Link](#))
200. Vijaykumar V. Jadhav, Dipak V. Shinde, Supriya A. Patil, Shude Liu, Sandesh U. Mutkule, Mu. Naushad, Rajaram S. Mane\*, **K.N. Hui\*** and Sung-Hwan Han, “Morphology-inspired low-temperature liquefied petroleum gas sensors of indium oxide” **Scripta Materialia**, 107, 54-58 (2015). ([Link](#))
201. Xinglai Zhang, K.S. Hui\*, **K.N. Hui\***, Y.R. Cho, Wei Zhou, Rajaram S. Mane and Ho-Hwan Chun, “Microstructure and electro-optical properties of Cu-Ni co-doped AZO transparent conducting thin films by sol-gel method”, **Journal of Materials Science-Materials in Electronics**, 26, 1156-1158 (2015). ([Link](#))
202. Xinglai Zhang, K.S. Hui\*, Feng Bin, **K.N. Hui\***, Y.R. Cho, Rajaram S. Mane and Wei Zhou, “Effect of thermal annealing on the structural, electrical and optical properties of Al-Ni co-doped ZnO thin films prepared using a sol-gel method”, **Surface & Coatings Technology**, 261, 149-155 (2015). ([Link](#))
203. Eun-Wook Jeong, Dong-Yong Kim, In-Kyun Choi, Hong-Seok Park, **K.N. Hui** and Y.R. Cho\*, “Evaluation of gas permeation through barrier layers for organic electronic devices by helium detector method”, **Micro & Nano Letters**, 9, 866-868 (2014). ([Link](#))
204. D.H. Wang, S. Cho, **K.N. Hui** and Y.G. Son\*, “Effect of sputtering power on structural and optical properties of radio frequency-sputtered In<sub>2</sub>S<sub>3</sub> thin films”, **Journal of Nanoscience and Nanotechnology**, 14, 8978-8981 (2014). ([Link](#))

205. D.A. Dinh, K.S. Hui\*, **K.N. Hui\***, Y.R. Cho, W. Zhou, X.T. Hong and H.H. Chun, “Green synthesis of high conductivity silver nanoparticle-reduced graphene oxide composite films”, **Applied Surface Science**, 298, 62-67 (2014). ([Link](#))
206. J.W. Lee, **K.N. Hui**, K.S. Hui\*, Y.R. Cho\* and H.H. Chun, “Low resistivity of Ni-Al co-doped ZnO thin films deposited by DC magnetron sputtering at low sputtering power”, **Applied Surface Science**, 293, 55-61 (2014). ([Link](#))
207. Y.D. Jo, **K.N. Hui\***, K.S. Hui, Y.R. Cho and K.H. Kim\*, “Microstructural, optical, and electrical properties of Ni-Al co-doped ZnO films prepared by DC magnetron sputtering”, **Materials Research Bulletin**, 51, 345-350 (2014). ([Link](#))
208. W. Zhou\*, Q.H. Wang, W.S. Ling, L.Z. He, Y. Tang, F. Wu, J.L. Liao, K.S. Hui and **K.N. Hui**, “Characterization of three- and four-point bending properties of porous metal fiber sintered sheet”, **Materials & Design**, 56, 522-527 (2014). ([Link](#))
209. D.Y. Kim, E.W. Jeong, **K.N. Hui**, Y.S. Choe, J.H. Han and Y.R. Cho\*, “Effect of Plasma Surface Treatment on Surface Energy and Adhesion Properties for Cr Coating on Substrates”, **Korean Journal of Metals and Materials**, 51, 735-741 (2013). ([Link](#))
210. P. Kumar\*, P. Srivastava, J. Singh, R. Belwal, M. Pandey, K.S. Hui\*, **K.N. Hui** and K. Singh, “Morphological evolution and structural characterization of Bismuth Telluride (Bi<sub>2</sub>Te<sub>3</sub>) nanostructures”, **Journal of Physics D-Applied Physics**, 46, 285301 (2013). ([Link](#))
211. X.L. Zhang, **K.N. Hui\***, K.S. Hui\* and Jai Singh, “Structural and optical characterization of high-quality ZnO thin films deposited by reactive RF magnetron sputtering”, **Materials Research Bulletin**, 48, 305-309 (2013). ([Link](#))
212. **K.N. Hui\***, K.S. Hui\*, Lei Li, Y.R. Cho and Jai Singh, “Low resistivity p-type AZO:Cu<sub>2</sub>O composite transparent conducting oxide thin film fabricated by sol-gel method”, **Materials Research Bulletin**, 48, 96-100 (2013). ([Link](#))
213. Wen Guo, **K.N. Hui\*** and K.S. Hui\*, “High conductivity nickel oxide thin films by a facile sol-gel method”, **Materials Letters**, 92, 291-295 (2013). ([Link](#))
214. Q.M. Wang\*, S.H. Kwon, **K.N. Hui**, D.I. Kim, K.S. Hui, K.H. Kim\*, “Synthesis and properties of crystalline TiO<sub>2</sub> films deposited by a HIPIMS+ technique”, **Vacuum**, 89, 90-95 (2013). ([Link](#))
215. Lei Li, K.S. Hui\*, **K.N. Hui\***, H.W. Park, D.H. Hwang, Shinho Cho, S.K. Lee, P.K. Song, Y.R. Cho, Heesoo Lee, Y.G. Son and W. Zhou, “Synthesis and characterization of NiO doped p-type AZO films fabricated by sol-gel method”, **Materials Letters**, 68, 283-286 (2012). ([Link](#))
216. H.W. Park, J.H. Bang, **K.N. Hui**, P.K. Song\*, W.S. Cheong and B.S. Kang, “Characteristics of NiO-AZO thin films deposited by magnetron co-sputtering in O<sub>2</sub> atmosphere”, **Materials Letters**, 74, 30-32 (2012). ([Link](#))
217. Jai Singh\*, Pushpendra Kumar, K.S. Hui, **K.N. Hui\***, K. Ramam, R. S. Tiwari and O.N. Srivastava, “Synthesis, band-gap tuning, structural and optical investigations of Mg doped ZnO nanowires”, **CrystEngComm**, 14, 5898-5904 (2012). ([Link](#))
218. Q.X. Xia, K.S. Hui\*, **K.N. Hui\***, D.H. Hwang, Jai Singh, Y.R. Cho, S.K. Lee, W. Zhou, Z.P. Wan, Chi-Nhan Ha Thuc and Y.G. Son, “High quality p-type N-doped AZO nanorods arrays by an ammonia-assisted hydrothermal method”, **Materials Letters**, 78, 180-183 (2012). ([Link](#))
219. L. Cui, **K.N. Hui\***, K.S. Hui\*, S.K. Lee, W. Zhou, Z.P. Wan and Chi-Nhan Ha Thuc, “Facile microwave-assisted hydrothermal synthesis of TiO<sub>2</sub> nanotubes”, **Materials Letters**, 75, pp. 175-178 (2012). ([Link](#))
220. Q.X. Xia, K.S. Hui\*, **K.N. Hui\***, D.H. Hwang, S.K. Lee, W. Zhou, Y.R. Cho, S.H. Kwon, Q.M. Wang, and Y.G. Son, “A facile synthesis method of hierarchically porous NiO nanosheets”, **Materials Letters**, 69, 69-71 (2012). ([Link](#))

221. D.H. Hwang, J.H. Ahn, **K.N. Hui**, K.S. Hui and Y.G. Son\*, “Structural and optical properties of ZnS thin films deposited by RF magnetron sputtering”, **Nanoscale Research Letters**, 7, 26 (7pp) (2012). ([Link](#))
222. D.H. Hwang, K.S. Hui, **K.N. Hui** and Y.G. Son\*, “Effect of Sputtering Power on the Structural and Optical Properties of CdS films”, **Journal of Nanoelectronics and Optoelectronics**, 7, 513-516 (2012). ([Link](#))
223. S.H. Kwon, N.H. Kwon, P.K. Song, **K.N. Hui**, K.S. Hui, Y.R. Cho\*, “In-situ electrical resistance measurement for determining minimum continuous thickness of Sn films by DC magnetron sputtering”, **Materials Letters**, 73, 62-64 (2012). ([Link](#))
224. W. Zhou\*, Y. Tang, R. Song, L.L. Jiang, K.S. Hui, and **K.N. Hui**, “Characterization of Electrical Conductivity of Porous Metal Fiber Sintered Sheet Using Four-point Probe Method”, **Materials & Design**, 37, 161-165 (2012). ([Link](#))
225. H.B. Kim, Y.J. Choi, **K.N. Hui**, C.S. Jang and Y.R. Cho\*, “Novel Method to Evaluate Moisture Permeation of the Metal Barrier Coating on Polymer Substrate”, **Journal of Nanoscience and Nanotechnology**, 12, 3511-3514 (2012). ([Link](#))
226. D.H. Hwang, J.H. Ahn, **K.N. Hui**, K.S. Hui and Y.G. Son\*, “Effect of oxygen partial pressure contents on the properties of Al-doped ZnO thin films prepared by radio frequency sputtering”, **Journal of ceramic processing research**, 12, 105-154 (2011). ([Link](#))
227. S.H. Kim, **K.N. Hui**, Y.J. Kim, T.S. Lim, D.Y. Yang, K.B. Kim, Y.J. Kim and S.S. Yang\*, “Oxidation resistant effects of Ag<sub>2</sub>S in Sn–Ag–Al solder: A mechanism for higher electrical conductivity and less whisker growth”, **Corrosion Science**, 105, 25-35 (2016). ([Link](#))
228. S. Sambasivam\*, D. Paul Joseph, S. Asiri Naidu, **K.N. Hui**, K.S. Hui and B.C. Choi\*, “Intense violet–blue emission and paramagnetism of nanocrystalline Gd<sup>3+</sup> doped ZnO ceramics”, **Journal of Advanced Ceramics**, 4, 300-306 (2016). ([Link](#)).
229. M.M. Haque\*, H.I. Lee and **K.N. Hui**, “Investigation of luminescent properties of red-emitting Ba (Gd, Eu) B<sub>9</sub>O<sub>16</sub> phosphors and the effect of Ca and Sr on its luminescent properties”, **Journal of Materials Science-Materials in Electronics**, ([Link](#)).
230. S.K. Gore, R.S. Mane\*, M. Naushad, S.S. Jadhav, M.K. Zate, Z.A. Alothman and **K.N. Hui\***, “Influence of Bi<sup>3+</sup>-doping on the magnetic and Mössbauer properties of spinel cobalt ferrite”, **Dalton Transactions**, 44, 6384-6390 (2015). ([Link](#))
231. C. Esther Jeyanthi\*, R. Siddheswaran, Pushendra Kumar, Jai Singh, **K.N. Hui**, K.S. Hui and K. Rajarajan, “Combustion synthesis, structural and optical properties of Nd-Doped ceria nanoparticles”, **Materials Focus**, 3, 191-196 (2014). ([Link](#))
232. Eun-Wook Jeong, **K.N. Hui**, Dong-Hyun Bae, Dong-Su Bae, Young-Rae Cho\*, “Identification of the intermetallic compound layer formed at the interface of roll-bonded aluminum-clad steel by thermal annealing”, **Metals and Materials International**, 20, 499-502 (2014). ([Link](#))
233. Xiaoting Hong\*, M.Y. Mo, X.H. Wu, G. Willing, K.S. Hui and **K.N. Hui**, “An Effective Zeta Potential Fitting Model for Sphere-Plate Interaction Force in Nanoparticle Suspensions”, **Journal of Dispersion Science and Technology**, 35, 338-342 (2014). ([Link](#))
234. M. P. Reddy\*, W. Madhuri, K. Sadhana, I.G. Kim, **K.N. Hui**, K.S. Hui, K.V. Siva Kumar and R.R. Reddy, “Microwave sintering of nickel ferrite nanoparticles processed via sol-gel method”, **Journal of Sol-Gel Science and Technology**, 70, 400-404 (2014). ([Link](#))
235. K.S. Hui\*, **K.N. Hui\***, D.A. Dinh, C.H. Tsang, Y.R. Cho, Wei Zhou, X.T. Hong and H.H. Chun, “Green synthesis of dimension-controlled silver nanoparticles-graphene oxide with in situ ultrasonication”, **Acta Materialia**, 64, 326-332 (2014). ([Link](#))
236. Pushendra Kumar\*, Jai Singh, M.K. Pandey, C.E. Jeyanthi, R. Siddheswaran, M. Paulraj, **K.N. Hui**, and K.S. Hui\*, “Synthesis, structural, optical and Raman studies of pure and lanthanum doped ZnSe nanoparticles”, **Materials Research Bulletin**, 49, 144-150 (2014). ([Link](#))

237. Jai Singh\*, Pushendra Kumar\*, **K.N. Hui**, J.W. Jung, R.S. Tiwari and O. N. Srivasatva, “Morphological evolution, structural and optical investigation of ZnO:Mg ( $\text{Mg}_x\text{Zn}_{1-x}\text{O}$  ( $0 \leq x \leq 30\%$ )) nanostructures”, **RSC Advances**, 3, 5465-5747 (2013). ([Link](#))
238. K.S. Hui, **K.N. Hui**, Cui-Lei Yin and X.T. Hong, “Synthesis of  $\text{Co}_3\text{O}_4$  nanowires on nickel foam by a novel microwave-assisted template-free method”, **Materials Letters**, 97, 154-157 (2013). ([Link](#))
239. Z.P. Wan, B. Liu, W. Zhou\*, Y. Tang, K.S. Hui and **K.N. Hui**, “Experimental study on shear properties of porous metal fiber sintered sheet”, **Materials Science and Engineering A-Structural Materials Properties Microstructure and Processing**, 544, 33-37 (2012). ([Link](#))
240. W. Zhou\*, Y. Tang, B. Liu, R. Song, L.L. Jiang, K.S. Hui, **K.N. Hui** and H.M. Yao, “Compressive Properties of Porous Metal Fiber Sintered Sheet Produced by Solid-state Sintering Process”, **Materials & Design**, 35, 414-418 (2011). ([Link](#))
241. R. Wu\*, R. Chen, H. Wang, Z.B. Wang, X. Zhu, Q. Liao, K.S. Hui and **K.N. Hui**, “Numerical Study on Catalytic Combustion of Methane with Ozone Using Pd-exchanged Zeolite X”, **Science China Chemistry**, 58, 899-904 (2015). ([Link](#))
242. M. Zhang\*, G. Gong, K.S. Hui, **K.N. Hui** and L. Liu, “Hydrolysis of microcrystalline cellulose for fermentable hexose in supercritical water”, **Journal of Energy Engineering**, 141, 04014033 (2015). ([Link](#))
243. M.C. Hu, K.S. Hui\* and **K.N. Hui\***, “Role of graphene in  $\text{MnO}_2$ /graphene composite for catalytic ozonation of gaseous toluene”, **Chemical Engineering Journal**, 254, 237-244 (2014). ([Link](#))
244. Shi-Ni Zhu, **K.N. Hui\***, Z.T. Hong and K.S. Hui\*, “Catalytic ozonation of basic yellow 87 with a reusable catalyst chip”, **Chemical Engineering Journal**, 242, 180-186 (2014). ([Link](#))
245. Shi-Ni Zhu\*, Guo-hua Liu, K.S. Hui, Zhengfang Ye and **K.N. Hui**, “A Facile Approach for the Synthesis of Stable Amorphous Nanoscale Zero-Valent Iron Particles”, **Electronic Materials Letters**, 10, 143-146 (2014). ([Link](#))
246. **K.N. Hui\***, Cui-Lei Yin, J.Y. Lee, M. Li, S.K. Lee, K.S. Hui\*, K.L. Tsui, C.Y.H. Chao and C.W. Kwong, “Synthesis of  $\text{Co}_3\text{O}_4$  Nanowire Arrays Supported on Ni Foam for Removal of Volatile Organic Compounds”, **Journal of Nanoscience and Nanotechnology**, 12, 3563-3566 (2012). ([Link](#))
247. X. Wu, **K.N. Hui\***, K.S. Hui\*, S.K. Lee, W. Zhou, R. Chen, D.H. Hwang, Y.R. Cho and Y.G. Son, “Adsorption of basic yellow 87 from aqueous solution on to mesoporous adsorbents”, **Chemical Engineering Journal**, 180, 91-98 (2012). ([Link](#))
248. M. Li, **K.N. Hui**, K.S. Hui\*, S.K. Lee, Y.R. Cho, Heesoo Lee, W. Zhou, Shinho Cho, C.Y.H. Chao and Yangyang Li, “Influence of modification methods and transition metal type on the physicochemical properties of MCM-41 catalysts and their performances in the catalytic ozonation of toluene”, **Applied Catalysis B-Environmental**, 107, 245-252 (2011). ([Link](#))
249. D.H. Kim, J.S. Bae, T.E. Hong, **K.N. Hui**, S.Y. Kim, C.H. Kim and J.C. Park, “Color-Tunable and Highly Luminous  $\text{N}^{3-}$ -Doped  $\text{Ba}_{2-x}\text{Ca}_x\text{SiO}_{4-\delta}\text{N}_{2/3\delta}:\text{Eu}^{2+}$  ( $0.0 \leq x \leq 1.0$ ) Phosphors for White NUV-LED”, **ACS Applied Materials & Interfaces**, 8, 17371-17381 (2016). ([Link](#))
250. Shuo Wang, K.S. Hui\*, **K.N. Hui\***, S. Sambasivam, X.L. Zhang, Y.R. Cho, In-Hong Kim, Woo-Jin Lee, Kwangseuk Kyhm and Jung-Chul Park, “Enhancement of the photoluminescence properties of  $\text{Ba}_{1.98}\text{SiO}_{4-\delta}\text{N}_{2/3\delta}:\text{Eu}_{0.02}$  phosphors and their application to green LEDs”, **Journal of Materials Science-Materials in Electronics**, 27, 2809-2815 (2016). ([Link](#))
251. Sambhaji S. Bhande, Dipak V. Shinde, Kailas K. Tehare, Supriya A. Patil, Rajaram S. Mane\*, Mu. Naushad, Z.A. Allothman, **K.N. Hui\*** and Sung-Hwan Han, “DSSCs synergic effect in thin metal oxide layer-functionalized  $\text{SnO}_2$  photoanodes”, **Journal of Photochemistry and Photobiology A-Chemistry**, 295, 64-69 (2014). ([Link](#))

252. T. Ganesh, H.M. Nguyen, R.S. Mane\*, N.J. Kim, D.V. Shinde, S.S. Bhande, M. Naushad, **K.N. Hui** and S.H. Han, “Promising ZnO-based DSSC performance using HMP molecular dyes of high extinction coefficients”, **Dalton Transactions**, 43, 11305-11308 (2014). ([Link](#))
253. **K.N. Hui\***, K.S. Hui\*, Q.X. Xia, T.V. Tuong, Y.R. Cho, Jai Singh, Pushpendra Kumar and E.J. Kim, “Enhanced light extraction efficiency of GaN-based LED with ZnO nanorod grown on Ga-doped ZnO seed layer”, **ECS Solid State Letters**, 2, Q43-Q46 (2013). ([Link](#))
254. X.L. Zhang, K.S. Hui\* and **K.N. Hui\***, “High photo-responsivity ZnO UV detectors fabricated by RF reactive sputtering”, **Materials Research Bulletin**, 48, 1093-1098 (2013). ([Link](#))
255. Jai Singh\*, P. Kumar, D.J. Late, T. Singh, M.A. More, R.S. Tiwari, K.S. Hui, **K.N. Hui\*** and O.N. Srivastava, “Optical and field emission properties in different nanostructures of ZnO”, **Digest Journal of Nanomaterials and Biostructures**, 7, 795-806 (2012). ([Link](#)).
256. **K.N. Hui\***, K.S. Hui, HeeSoo Lee, D.H. Hwang and Y.G. Son, “Enhanced light output of angled sidewall light-emitting diodes with reflective silver films”, **Thin Solid Film**, 519, 2504-2507 (2011). ([Link](#))
257. **K.N. Hui\***, and K.S. Hui, “Vertically-stacked LEDs with invariance of color Chromaticity”, **Current Applied Physics**, 11, 662-666 (2011). ([Link](#))
258. Rui Chen, H.D. Sun\*, T. Wang, **K.N. Hui** and H.W. Choi\*, “Optically-pumped ultraviolet lasing from nitride nanopillars at room temperature”, **Applied Physics Letters**, 96, 241101 (3pp) (2010). ([Link](#)) (**Front Cover Image; #3 of Top 20 Most Downloaded Articles, June 2010**)
259. **K.N. Hui**, X.H. Wang, Z.L. Li, P.T. Lai and H.W. Choi\*, “Design of Vertically-stacked Polychromatic Light-emitting Diodes”, **Optics Express**, 17, 9873-9878 (2009). ([Link](#))
260. W.Y. Fu, **K.N. Hui**, X.H. Wang, K.K.Y. Wong, P.T. Lai and H.W. Choi\*, “Geometrical Shaping of InGaN Light-emitting Diodes by Laser Micromachining”, **IEEE Photonics Technology Letters**, 21, 1078-1080 (2009). ([Link](#))
261. **K.N. Hui**, P.T. Lai and H.W. Choi\*, “Vertically-stacked Color-tunable LEDs”, **Physica Status Solidi (c)**, 6, S902 (2009). ([Link](#)) (**Front Cover Image**)
262. **K.N. Hui**, W.Y. Fu, W.N. Ng, C.H. Leung, P.T. Lai and H.W. Choi\*, “Polychromatic Light Emitting Diodes with a Fluorescent Nanosphere Opal Coating”, **Nanotechnology**, 19, pp. 355203 (6pp) (2008). ([Link](#))
263. **K.N. Hui**, P.T. Lai and H.W. Choi\*, “Spectral Conversion with Fluorescent Microspheres for Light Emitting Diodes”, **Optics Express**, 16, 13-18 (2008). ([Link](#))
264. **K.N. Hui**, W.N. Ng, C.H. Leung, P.T. Lai and H.W. Choi\*, “Polychromatic Emission from Fluorescent-Microsphere-Coated LEDs”, **Physica Status Solidi (c)**, 5, 2201-2203 (2008). ([Link](#))
265. H.W. Choi\*, **K.N. Hui**, P.T. Lai, P. Chen, X.H. Zhang, J.H. Teng, S. Tripathy and S.J. Chua, “Stimulated Emission from Free-standing GaN/Si Microdisk Structures”, **Physica Status Solidi (c)**, 4, 2358-2361 (2007). ([Link](#))
266. W.C.H. Choy\*, **K.N. Hui**, H.H. Fong, Y.J. Liang and P.C. Chui, “Improving the efficiency of organic light emitting devices by using co-host electron transport layer”, **Thin Solid Films**, 509, 193-196 (2006). ([Link](#))
267. H.H. Fong, W.C.H. Choy\*, **K.N. Hui** and Y.J. Liang, “Organic light-emitting diodes based on a co-host electron transporting composite”, **Applied Physics Letters**, 88, 113510 (3pp) (2006). ([Link](#))
268. H.W. Choi\*, **K.N. Hui**, P.T. Lai, P. Chen, X.H. Zhang, S. Tripathy, J.H. Teng and S.J. Chua, “Lasing in GaN Microdisks Pivoted on Si”, **Applied Physics Letters**, 89, 211101 (3pp) (2006). ([Link](#)) (**Front Cover Image; #1 of Top 20 Most Downloaded Articles, Nov 2006**)

**Granted Patents (No. 14)**

1. H.W. Choi, **K.N. Hui**, X.H. Wang “SEMICONDUCTOR COLOR-TUNABLE BROADBAND LIGHT SOURCES AND FULL-COLOR MICRODISPLAYS” US7982228B2
2. H. F. Li, **K. N. Hui**, P. F. Zhou, S. P. Li, Q. Zhao, K. T. Sun, J. C. Xia, S. Wu, Y. H. Zhu, “CERAMIC OXIDE SOLID-STATE ELECTROLYTE AND PREPARATION METHOD THEREFOR” PCT/CN2022/072698
3. **K.N. Hui**, L. W. Liu, “ZINC DIPHOSPHIDE/ZINC PHOSPHATE COMPOSITE MATERIAL, AND PREPARATION METHOD AND USE THEREOF” PCT/CN2024/135354/US19/107700
4. **K.N. Hui** and Y. S. Zheng, “POSITIVE ELECTRODE MATERIAL AND PREPARATION METHOD AND USE THEREOF” PCT/CN2024/107546/US19/107859
5. **K.N. Hui** and H. X. Xie, “COMPOSITE NEGATIVE ELECTRODE MATERIAL, PREPARATION METHOD THEREFOR AND USE THEREOF” PCT/CN2024/090075/US19/107068
6. **K.N. Hui** “METHOD FOR PREPARING NITROGEN-DOPED GRAPHENE AND NITROGEN-DOPED GRAPHENE PREPARED THEREBY” PCT/KR2015/003464
7. **K.N. Hui**, J.Y. Lee “CONDUCTIVE OXIDATION MEMBRANE WITH EXCELLENT ELECTRIC PROPERTY BY FORMING THE COMPOSITE OF NICKEL OXIDE AND AZO BY A CHEMICAL METHOD AND A MANUFACTURING METHOD” Korea patent 10-2013-0023744
8. **K.N. Hui**, J.Y. Lee “POROUS COMPOSITE FOR REMOVING VOLATILE ORGANIC COMPOUND AND POROUS METAL MATERIAL AS WELL AS ADHERED COBALT OXIDE NANOWIRE ARRAY, AN OZONE CATALYTIC OXIDATION REACTOR INCLUDING THE SAME AND A MANUFACTURING METHOD THEREOF” Korea patent 10-2013-0058138
9. **K.N. Hui** “TRANSPARENT CONDUCTIVE GRAPHENE-NANOCOMPOSITE THIN FILM, AND MANUFACTURING METHOD THEREOF” Korea Patent 10-2016-0012403
10. K. H. Kim, **K. N. Hui**, J. M. Yun, Q. X. Xia “SUPERCAPACITOR WITH IMPROVED CAPACITANCE AND MANUFACTURING METHOD THEREOF Korea Patent 10-2015-0067831
11. **K.N. Hui** “AZO:N COMPOSITE NANOCOMPOSITE CAPABLE OF IMPLEMENTING THE HIGH QUALITY PERFORMANCE OF A ZINC OXIDE OPTOELECTRONICS APPARATUS, A PRODUCTION METHOD THEREOF, AND A NANO DEVICE ASSEMBLY USING THE SAME” Korea patent 10-2012-0019896
12. **K. N. Hui** “TRANSPARENT COMPOSITE CONDUCTIVE OXIDE THIN FILMS WITH EXCELLENT TRANSPARENCY AND OPTICAL PERFORMANCE INCLUDING AN AZO LAYER DOPED WITH COPPER OXIDE AND A MANUFACTURING” Korea Patent 10-2013-0112554
13. **K.N. Hui** “MANUFACTURING METHOD OF NIO NANOSHEET WHICH SECURES ELECTRICAL STABILITY AND HIGH CURRENT DENSITY OF THE NIO NANOSHEET AND THE NIO NANOSHEET WHICH IS MANUFACTURED WITH THE METHOD THEREOF” Korea patent 10-2013-0102158
14. **K.N. Hui** “TRANSPARENT COMPOSITE CONDUCTIVE OXIDE THIN FILM WITH EXCELLENT ELECTRIC PERFORMANCE AND TRANSPARENCY USING ZINC OXIDE DOPED WITH ALUMINUM AND A MANUFACTURING METHOD THEREOF” Korea patent 10-2013-0114046

### Teaching Ability and Performance

With 15.5 years of experience teaching a variety of courses, I have gained valuable insights that enhance my ability to assist students with assignments, discussion sections, and projects. I am dedicated to an

interdisciplinary approach to teaching. In addition to classroom instruction, I supervise students on relevant research topics, providing editing and evaluation of their work. I also serve as a college mentor.

- I have designed two undergraduate courses in the Department of Physics and Chemistry, one general education courses, and one postgraduate course in the Institute of Applied Physics and Materials Engineering.
- My teaching has been highly evaluated and appreciated for evoking students' curiosity about learning and inspiring them to develop logical thinking to augment their problem-solving skills from the teaching evaluation surveys. My average evaluation rating in the last 3 years (2021-2023) is **5.62** in Course and **5.64** in Instructor.
- I have supervised **24 PhD students**, nine of whom have successfully graduated. Among the graduates, three are currently employed at leading EV car companies in China, including BYD and Geely Holding Group. I have also mentored undergraduates in Chao Kuang Piu College.

### New Courses Developed

Level	Course	Status
Graduate	APME8014 Advanced Electrochemical Energy Conversion and Storage	Active
Undergraduate	GEST1015 Physics and Modern Society	Active
Undergraduate	APAC4010 Topics in Emerging Materials	Active
Undergraduate	APAC4001 Electrochemistry	Active

### Courses taught from Spring 2021 to Spring 2023

(Effectiveness Scale: 1=Strongly bad, 2=bad, 3=slightly bad, 4= slightly good, 5=good, 6=Strongly good)

	Semester	Course name	Course	Instructor
Academic Year 2023/2024	First Semester	APME814-001 Advanced Electrochemical Energy Conversion and Storage (graduate)	5.98/6.00	5.96/6.00
	Second Semester	GEST1015-001 Physics and Modern Society (undergraduate)	5.54/6.00	5.43/6.00
Academic Year 2022/2023	First Semester	APME814-001 Advanced Electrochemical Energy Conversion and Storage (graduate)	5.99/6.00	5.93/6.00
	Second Semester	GEST1015-001 Physics and Modern Society (undergraduate)	5.46/6.00	5.50/6.00
Academic Year 2021/2022	First Semester	APME814-001 Advanced Electrochemical Energy Conversion and Storage (graduate)	-	-
	Second Semester	GEST1015-001 Physics and Modern Society (undergraduate)	5.21/6.00	5.33/6.00
	<b>Average</b>		<b>5.62/6.00</b>	<b>5.64/6.00</b>

### Supervision of postgraduate students

- Supervision of Ph.D. students of IAPME

No.	Student Name	Enrollment	Supervision	Status	Employment
28	LIU YUNCE	08/2025	Supervisor		
27	HUANG MENGYAO	08/2025	Supervisor		
26	DONG ZHEYAN	08/2025	Supervisor		

25	SONG ZICHEN	08/2025	Supervisor		
24	FAN RONG	08/2025	Supervisor		
23	CHEN XINCHENG	08/2024	Supervisor		
22	WANG YAN	08/2024	Supervisor		
21	FU GUODONG	08/2024	Supervisor		
20	CAO LEI	08/2024	Supervisor		
19	SUI HEYU	08/2024	Supervisor		
18	MIN ZHIMEN	08/2023	Supervisor		
17	TEN YUNLONG	08/2023	Supervisor		
16	XIE HUIXIAN	08/2023	Supervisor		
15	LIU XIAOLU	08/2022	Supervisor		
14	LIU LINGWEN	08/2022	Supervisor		
13	DING KE	08/2022	Supervisor		
12	JIANG QINGBIN	08/2022	Supervisor	Graduated in 11/2025	Postdoc, Institute of Applied Physics and Materials Engineering, University of Macau
11	CHEN TIANYU	08/2022	Supervisor		
10	XU HUIFANG	01/2022	Supervisor; Synergistically Boosting the Sulfur Redox Kinetics over Polar Catalysts in Lithium-Sulfur Batteries	Graduated in 03/2025	Postdoc, Institute of Applied Physics and Materials Engineering, University of Macau
9	ZHENG YUNSHAN	08/2021	Supervisor	Graduated in 07/2024	Postdoc, Tsinghua Shenzhen International Graduate School
8	WANG KAIXI	08/2020	Supervisor	Graduated in 05/2023	Assistant Researcher, Harbin Institute of Technology Zhengzhou Research Institute
7	WANG SHUO	08/2020	Supervisor	Graduated in 09/2022	Assistant Researcher, Dalian Institute of Chemical Physics, Chinese Academy of Sciences
6	LI JUNFENG	08/2019	Supervisor	Graduated in 12/2022	Postdoc, Tsinghua Shenzhen International Graduate School
5	JI SHUNPING	08/2019	Supervisor	Graduated in 05/2022	Director, Cell Development Engineering, BYD

					Company Limited
4	GAO HAIXING	01/2019	Supervisor	Graduated in 08/2022	Assistant Professor, School of Chemistry and Chemical Engineering, Yili Normal University
3	YU XUEQING	08/2018	Co-Supervisor	Graduated in 08/2021	Lecturer, College of Electronics Information, Hangzhou Dianzi University
2	KANG YAO	08/2017	Supervisor	Graduated in 04/2021	Director, Solid-State Battery Research and Development, Zhejiang Geely Holding Group.
1	ZHU SIQI	08/2017	Supervisor	Graduated in 08/2021	Chief Research Engineer, Cell Development Engineering, BYD Company Limited

➤ Co-supervision of Ph.D. students from Pusan National University since I joined UM in 2015.

Name	Thesis	Journal papers
Dr. LIU Shude (2016.09.01-2020.02.28) School of Mechanical Engineering, Yonsei University, South Korea. Primary Supervisor: Prof. JUN Seong Chan Co-Supervisor: HUI Kwun Nam (after I joined UM in 2015)	Development of Nanomaterials for High-Performance Supercapacitor	<ol style="list-style-type: none"> <li>1. Journal of Materials Chemistry A, 5, pp. 19046-19053, 2017. <a href="#">link</a></li> <li>2. Advanced Science, 5, pp. 1800733-1800733, 2018. <a href="#">link</a></li> <li>3. Energy Storage Materials, 22, pp. 384-396, 2019. <a href="#">link</a></li> <li>4. Energy Storage Materials, 19, pp. 186-196, 2019. <a href="#">link</a></li> <li>5. Small, 15, pp. 1803984, 2019. <a href="#">link</a></li> <li>6. Journal of Materials Chemistry A, 46, pp. 26618-26630, 2019. <a href="#">link</a></li> <li>7. Electrochimica Acta, 297, pp. 479-487, 2019. <a href="#">link</a></li> <li>8. Small, 16, pp. 1906458, 2020. <a href="#">link</a></li> </ol>
Dr. WU Shuxing (2014.09.01-2018.02.28) School of Materials Science and Engineering, Pusan National University, Busan, Korea Primary Supervisor: Prof. KIM Kwang Ho Co-Supervisor: HUI Kwun Nam (after I joined UM in 2015)	Graphene-based Hybrid Materials for Supercapacitor Application	<ol style="list-style-type: none"> <li>1. The Journal of Physical Chemistry C, 119, pp. 23358–23365, 2015. <a href="#">link</a></li> <li>2. Journal of Materials Chemistry A, 4, pp. 9113-9123, 2016. <a href="#">link</a></li> <li>3. RSC Advances, 7, pp. 41771-41778, 2017. <a href="#">link</a></li> <li>4. Chemical Engineering Journal, 317, pp. 461-470, 2017. <a href="#">link</a></li> <li>5. ACS Applied Materials &amp; Interfaces, 9, pp. 1395–1406, 2017. <a href="#">link</a></li> <li>6. Advanced Science, 5, pp. 1700491, 2018. <a href="#">link</a></li> <li>7. ACS Sustainable Chemistry &amp; Engineering, 7, pp. 9763-9770, 2019. <a href="#">link</a></li> </ol>

<p>Dr. LI Lei (2012.09.01-2018.08.31) School of Materials Science and Engineering, Pusan National University, Busan, Korea Primary Supervisor: Prof. CHO Young-Rae HUI Kwun Nam (after I joined UM in 2015)</p>	<p>Development of Nickel Aluminum Layered Double Hydroxides for High-Performance Supercapacitor</p>	<ol style="list-style-type: none"> <li>1. Materials Research Bulletin, 48, pp. 96–100, 2013. <a href="#">link</a></li> <li>2. Surface and Coatings Technology, 261, pp. 149-155, 2015. <a href="#">link</a></li> <li>3. Journal of Materials Science: Materials in Electronics, 27, pp. 1719-1724, 2016. <a href="#">link</a></li> <li>4. Journal of Materials Chemistry A, 5, pp. 19687-19696, 2017. <a href="#">link</a></li> <li>5. Journal of Alloys and Compounds, 721, pp. 803-812, 2017. <a href="#">link</a></li> <li>6. Journal of Materials Science: Materials in Electronics, 29, pp. 17493-17502, 2018. <a href="#">link</a></li> </ol>
---	---	---

➤ Supervision of MSc students at IAPME

No.	Student Name	Enrollment	Supervision	Research project
8	ZICONG ZHAO	08/2025	Supervisor	
7	YU LE	08/2025	Supervisor	
6	XINZE LI	08/2025	Supervisor	
5	GAO KANG	08/2024	Supervisor	Modulating Lattice Strain in Metal Selenide for High-Capacity Li-S Batteries
4	HU YUNXIAO	08/2024	Supervisor	Optimizing the Cathode for Stable Solid-State Li-S Batteries
3	QIU RONGXI	08/2024	Supervisor	Electronic Modulation of Metal Selenide for High-Capacity Li-S Batteries
2	CHEN HONGYI	08/2023	Supervisor	Research on the modification of phosphorus-based anode fast-charging materials for lithium-ion batteries
1	CHEN GUANXI	08/2023	Supervisor	The Application and Fabrication of Conductive Carbon in All-Solid-State Lithium-Sulfur Batteries

➤ Supervision of Oversea students at IAPME

No.	Student Name	Enrollment	Supervision	Research project
2	LAM TAK FAI (Imperial College London)	06/2023	Supervisor	Fundamental of Li-S Batteries
1	I WENG LAM (University College London)	07/2022	Supervisor	Commercialization Study of Lithium-Sulfur Batteries

➤ Mentored Undergraduates Students at DPC

No.	Student Name	Enrollment	Supervision	Research project
5	SI WAI CHIO	10/2021	Supervisor	Design of Composite Transition Metal Catalysts for Lithium-Sulfur Batteries
4	QIU RONGXI	10/2020-08/2023	Supervisor	Catalyst Separators to Improve Performance of Potassium-Sulfur Batteries
3	HO SENG CHI	10/2020-08/2023	Supervisor	Design of Phosphorus-based materials for high-performance Potassium-sulfur Battery
2	XU YANGSEN	10/2019-08/2022	Supervisor	Selecting the right materials for catalysts in hydrogen and oxygen evolution reactions
1	TANG GAOFENG	10/2019-08/2022	Supervisor	Development of Potassium-Sulfur Batteries

➤ Mentored Undergraduates Students at CYTC of UM

No.	Student Name	Enrollment	Supervision	Research project
1	ZHANG YUNZHE (FST)	05/2023-present	Supervisor	Hard Carbon Anode for Sodium-Ion Batteries

### University Service

I have contributed many administrative functions to the University, the Institute, and the Department.

**At university level**

- Non-residential fellow of Cheng Yu Tung College, 01/09/2024 – present
- Non-residential fellow of Chao Kuang Piu College, 01/01/2018 – 31/08/2024
- Mentor of Chao Kuang Piu College for year-one undergraduate students, 01/08/2018 – present
- I organized a green renewable energy education workshop to promote the importance of green energy saving to invited guests, visitors, and students at the celebration of the 35th Anniversary of the University of Macau at Chao Kuang Piu College on 19th March 2016
- I am a steering committee of Science Promotion Center of FDCT, aiming to identify and nurture the gifted junior secondary students at an early age for producing future local scientists. We organized a Talent Program on 30th January 2016 to identify 12 gifted students among 29 local students aged between 13 to 15 by a series of written test, group test, and interview.
- I chaired the round table discussion during the first “Christmas Scientific Dialogue: Visit of Nobel Laureate Konstantin Novoselov“ at CKPC on 27th December 2015
- Ad-hoc member for patent review meetings, frequently

**At the institute and department level**

Currently, I am:

- Member of Academic Leave Committee
- Member of Research Strategic Committee, Department of Physics and Chemistry
- Member of Pedagogic Committee
- Member of IAPME High School Liaison

- Member of high-school projects under STEM education center

I had been:

- Chair of Academic Leave Committee, 2020 – 2022
- Chair of Chairs in Laboratory Technician Search Committee, PG study, Purchasing & Renovation Task, 2015 – 2018

### Community Service

- Participated as a team leader in 55th International Physics Olympiad in 2025, Paris, 18<sup>th</sup>-24<sup>th</sup> July 2025. Lead the Macao's team and won two **Bronze Medals**



- Participated as a team leader in Regeneron International Science and Engineering Fair, Columbus 10<sup>th</sup>-16<sup>th</sup> May 2025. Lead the Macao's team and won a **Fourth Grand Award and a Special Award**



- Participated as a team leader in Regeneron International Science and Engineering Fair, Los Angeles 11<sup>th</sup>-19<sup>th</sup> May 2024. Lead the Macao's team and won a **Fourth Grand Award**



- Volunteer to support the nucleic acid station, 2022
- Serve as Judge at 3rd Macao Young Scientists Conference, 2021 – present
- Lead Macao's team to participate the Regeneration International Science and Engineering Fair 2020, Anaheim, California, **Finalist**
- Serve as Judge at Guangdong-Hong Kong-Macao Greater Bay Area Doctoral Postdoctoral Innovation and Entrepreneurship Competition Preliminary Round, 2019 – present
- Lead the Macao's team to participate Imperial College London, Faculty of Natural Sciences, The Schools Science Competition 2019 (31/03/2019); **The Winner of 2019 (The first Champion in Macao since 2015)**
- Serve as Judge at 34th China Adolescents Science & Technology Innovation Contest, Parisian Hotel (20/07/2019-24/07/2019)
- Participated as a team leader in the 20<sup>th</sup> Asian Physics Olympiad, Adelaide 5<sup>th</sup>-13<sup>th</sup> May 2019. Lead the Macao's team.  
Serve as Judge at Hong Kong Student Science Project Competition, Science Park, Hong Kong (23/03/2019)
- Organized 1<sup>st</sup> Sustainable Energy Storage System Summer Camp 2019 (4/07/2019-06/07/2019)
- Represented the DPC to give a lecture to Our Lady of Fatima School (16/09/2019)
- Represented the Centre for Innovation and Entrepreneurship to participate in the Roadshow in China and Macao Industrial Exhibition, 2018 – present
- Mentor of Macau Pui Ching Middle School, 2018 – present

## Referees

Professor Roy Vellaisamy  
James Watt School of Engineering  
University of Glasgow  
Glasgow G12 8QQ, United Kingdom  
Tel: +44 (0)141 330 2000  
Email: [Roy.Vellaisamy@glasgow.ac.uk](mailto:Roy.Vellaisamy@glasgow.ac.uk)

Professor Kwan San (Oscar) Hui  
Department of Mechanical Engineering, College of Engineering  
Prince Mohammad Bin Fahd University  
Al Khobar 34754, Kingdom of Saudi Arabia  
Tel: +966 13 849 8400  
Email: [khui@pmu.edu.sa](mailto:khui@pmu.edu.sa)

Professor Zhiqun Lin  
Provost's Chair Professor, Department of Chemical and Biomolecular Engineering  
National University of Singapore  
4 Engineering Drive 4, E5-03-01, Singapore 117585, Singapore  
Tel: +65 6516 2189  
Email: [z.lin@nus.edu.sg](mailto:z.lin@nus.edu.sg)

Professor Zongping Shao  
John Curtin Distinguished Professor  
WA School of Mines: Minerals, Energy and Chemical Engineering (WASM–MECE)  
Curtin University  
Perth WA 6102, Australia  
Tel: +61 8 9266 9266  
Email: [zongping.shao@curtin.edu.au](mailto:zongping.shao@curtin.edu.au)

Professor Meng Ni  
Associate Dean (FCE) & Chair Professor of Energy Science and Technology  
Faculty of Construction and Environment  
The Hong Kong Polytechnic University  
Hung Hom, Kowloon, Hong Kong  
Tel: +852 2766 6018  
Email: [meng.ni@polyu.edu.hk](mailto:meng.ni@polyu.edu.hk)

Professor Oi Lun Helena Li  
School of Materials Science and Engineering  
Pusan National University  
2, Busandaehak-ro 63beon-gil, Geumjeong-gu, Busan 46241, Republic of Korea  
Tel: +82 51 510 2384  
Email: [helenali@pusan.ac.kr](mailto:helenali@pusan.ac.kr)