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RESEARCH EXPERIENCE

Aug. 2026–Present

Assistant Professor,

Department of Advanced Materials Science and Engineering,
SungKyunKwan University (SKKU), Republic of Korea

Jan. 2024–Jul. 2026

Research Scientist,

Physical Science and Engineering (PSE) Division
King Abdullah University of Science and Technology (KAUST) in Saudi Arabia. *Prof. Cafer T. Yavuz* group.

Jan. 2021–Jan. 2024

Postdoctoral Fellow,

Advanced Membrane and Porous Materials Center (AMPMC), KAUST Catalysis Center (KCC),
King Abdullah University of Science and Technology (KAUST) in Saudi Arabia. *Prof. Cafer T. Yavuz* group.

Sep. 2019–Jan. 2021

Postdoctoral Research Associate,

School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology (UNIST),
Republic of Korea. *Prof. Jong-Beom Baek* group.

Jan. 2019–Jan. 2021

Technical Advisor,

RuC2N startup company (Green hydrogen electrode development company), Republic of Korea.

Nov. 2016–Jul. 2017

Visiting Researcher,

Physical Sciences Division, Pacific Northwest National Laboratory (PNNL) in the US. *Prof. Jim De Yoreo* group.

EDUCATION

Sep. 2014–Aug. 2019

Combined Master's and Doctoral Degrees in Energy Engineering,

School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology (UNIST),
Republic of Korea. *Prof. Jong-Beom Baek* group.

Mar. 2011–Aug. 2014

Bachelor of Science,

School of Energy and Chemical Engineering & School of Material Science Engineering,
Ulsan National Institute of Science and Technology (UNIST), Republic of Korea.

GRANTS, AND SCHOLARSHIPS

Sept. 2021–Aug. 2022

Research Director of Postdoctoral Fellowship

Nurturing Next-generation Researchers (2021R1A6A3A03039501) from the National Research Foundation (NRF) of
Korea (KRW 45,000,000/year)

Title: Development of high-efficiency ammonia decomposition catalyst technology using modified porous support and
bimetallic system

Mar. 2014–Feb. 2016

Global Ph.D. Fellowship (GPF)

200 selected in the Korean graduate student program (2015H1A2A1033617) from the NRF of Korea (KRW 30,000,000/year)

Title: Synthesis of High-performance Dimension Controllable Covalent Organic Frameworks

Mar. 2011–Aug. 2014

National Science and Engineering Undergraduate Scholarship

Selected as an outstanding student at UNIST and received benefits from the Korea Student Aid Foundation (KRW 26,630,000)

AWARDS AND CERTIFICATES

Jun. 2025 Nanoscale Journal Family Prize, RSC and NCNST

Sep. 2023 Higher Education Teaching Certificate, Harvard's Derek Bok Center with HarvardX

Jan. 2022 Swiss Academy of Sciences: Special Sponsor Awards, EYChem

Nov. 2019 Best Graduate Student Award, Department of Energy Engineering, UNIST

Oct. 2019 Excellence Prize for the Future Automobile Material, Hyundai Motor & the Polymer Society of Korea

Nov. 2018 Talent Award of Korea, Ministry of Education, Korea

Nov. 2018 Outstanding Graduate Student Award, Department of Energy Engineering, UNIST

Mar. 2015 Global Ph.D. Fellowship (GPF), National Research Foundation of Korea

PUBLICATIONS OVERVIEW

Journal publication (SCI/SCIE): 43

Patents (Registration): 4 (PCT) / 4 (US) / 1 (Japan) / 1 (China) / 1 (Europe) / 10 (Korea)

PATENTS

New chemicals: 2 (Korea)

- Diquinoxalino[2,3-a:2',3'-c]phenazine-2,3,8,9,14,15-h examine (Korea Registration No.10-1793453)

- Tetrahedral octaamine (Korea Registration No. 10-2070020)

Material synthetic methods: 1 (PCT) / 2 (US) / 4 (Korea)

- Ru-based catalyst (Korea Registration No.10-2049637 & No.10-2138134 & US Registration No. US 11,078,581 & PCT Pub. No. WO2018/155767 & US No. 20250387778 A1)

- Ir-based catalyst (Korea Registration No.10-2144722)

- Graphene-based catalyst (Korea Registration No. 10-2096865)

Electrode technology: 1 (PCT) / 2 (US) / 3 (Korea)

- Water electrolysis (Korea Registration No.10-2251850, US Patent No. 11,078,581 B2, US Pub. No. 202263339726 P)

- Carbon fiber electrodes (PCT No. PCT/KR2021/009270 & Korea Registration No. 10-2266377 & No. 10-2636169)

Synthetic process: 1 (PCT) / 1 (Korea) / 1 (Japan) / 1 (US) / 1 (China)

- Mechanochemical reaction for NH₃ synthesis (Korea Registration No. 10-2321424 & PCT Application No. PCT/KR2020/019127, JP7513770, CN115996892B)

- Coking-free dry reforming catalyst (US Pub. US 12491506 B2)

PUBLICATIONS (SCI/E)

1. Azimet A. Karluk, Javeed Mahmood, **Seok-Jin Kim***, Cafer T. Yavuz*, Optimization of Ni–Mo alloy nanoparticles for catalytic dry reforming of methane, *Beilstein Journal of Nanotechnology*, 17, 1212–1222 (2026) <https://doi.org/10.3762/bjnano.17.84>
2. Muhammand Bilal Asif, Ahror Ismoili, Abdul Ghaffar, **Seok-Jin Kim**, Javeed Mahmood*, Cafer T. Yavuz*, Micropollutant elimination from complex water matrices by microporous covalent triazine frameworks, *Environmental Science Nano*, 13, 3227–3239 (2026) <https://doi.org/10.1039/d6en00327c>

3. **Seok-Jin Kim**, Raghu Maligal-Ganesh, Javeed Mahmood, Phil Woong Kang, Aadesh Harale, Abdulrahman S. AlSuhaibani, Qingyuan Hu, Ammar H. Alahmed, Aqil Jamal, Rukaiyat Suleiman, Husain Baaqel, S. Mani Sarathy, Cafer T. Yavuz* Industrial-scale nano crystalline Ni-Mo-MgO catalysts for hybrid reforming of waste to fuels, *Science* 392, 1369–1374 (2026) <https://doi.org/10.1126/science.adp5208>
4. Ga-Hyeun Lee⁺, **Seok-Jin Kim**⁺, Jung-Eun Lee, Min Woo Kim, Javeed Mahmood, Gao-Feng Han, Hyuk-Jun Noh, Jaeeun Lyu, Cafer T. Yavuz*, Jong-Beom Baek*, Han Gi Chae* Rheological Pathways to Scalable Ruthenium Nuclei Anchored Carbon Fiber Catalyst, *ACS Nano* 20, 14195–14208 (2026) <https://doi.org/10.1021/acsnano.6c01924>
5. Swati Singh, **Seok-Jin Kim**, Cafer T. Yavuz, Mingwu Tan, Eswaravara Prasadarao Komarala, Kyriaki Polychronopoulou* Exploring Ru/CeO₂ catalysts supported by Ceria MOF-derived materials for improved Ammonia Synthesis and decomposition efficiency at mild Conditions, *Microstructures* 6, 2026058 (2026) <https://doi.org/10.20517/microstructures.2025.129>
6. Azimet A. Karluk, Bashir E. Hasanov, Simil Thomas, Aleksander Shkurenko, **Seok-Jin Kim**, Mohamed Eddaoudi*, Javeed Mahmood*, and Cafer T. Yavuz* Light Scattering Suppression in Organometallic Halide Glasses by Microporous Silicon Embedding, *ACS Applied Materials & Interfaces* 9, 2, 1104–1111 (2026) <https://doi.org/10.1021/acsaem.5c03404>
7. Zhong-hua Xue, Javeed Mahmood, Yuxuan Shang, Guanxing Li, **Seok-Jin Kim**, Yu Han, Cafer Yavuz* Simple and scalable introduction of single-atom Mn on RuO₂ electrocatalysts for oxygen evolution reaction with long term activity and stability, *Journal of the American Chemical Society* 147, 21, 17839–17848 (2025) <https://doi.org/10.1021/jacs.5c01886>
8. **Seok-Jin Kim**, Raghu Maligal-Ganesh, Pravin Babar, Javeed Mahmood, Cafer T. Yavuz* Structural control over single-crystalline oxides for heterogeneous catalysis, *Nature Reviews Chemistry* 9, 397–414 (2025) <https://doi.org/10.1038/s41570-025-00715-5>
9. Swati Singh, Eswaravara Prasadarao Komarala, **Seok-Jin Kim**, Cafer T. Yavuz, Louai Mahdi Maghrabi, Nirpendra Singh, Messaoud Harfouche, Victor Sabastian, Ondrej Malina, Aristides Bakandritsos, Dalaver Hussain Anjum, Ali Abdulkareem AlHammadi, Kyriaki Polychronopoulou* Robust Ru single-atom alloy catalysts coupled with adjacent Fe-site for highly stable ammonia synthesis under mild conditions, *Applied Surface Science* 161906 (2025) <https://doi.org/10.1016/j.apsusc.2024.161906>
10. **Seok-Jin Kim**, Javeed Mahmood, Phil Woong Kang, Zhonghua Xue, Cafer T. Yavuz* Challenges in electrolyzer performance evaluation for green hydrogen production, *ACS Materials Letters* 6, 3168–3175 (2024) <https://doi.org/10.1021/acsmaterialslett.4c00690>
11. Omer Elmutasim, Aseel G. Hussien, Abhishek Sharan, Sara AlKhoori, Michalis A. Vasiliades, Inas Magdy Abdelrahman Taha, **Seok-Jin Kim**, Messaoud Harfouche, Abdul-Hamid Emwas, Dalaver H. Anjum, Angelos M. Efstathiou, Cafer T. Yavuz, Nirpendra Singh*, and Kyriaki Polychronopoulou* Evolution of oxygen vacancy sites in ceria-based high-entropy oxides and their role in N₂ activation, *ACS Applied Materials & Interfaces* 16, 18, 23038–23053 (2024) <https://doi.org/10.1021/acsaami.3c16521>
12. **Seok-Jin Kim**, Ga-Hyeun Lee, Jung-Eun Lee, Javeed Mahmood, Gao-Feng Han, Inkyung Baek, Changbeom Jeon, Minjung Han, Hwakyung Jeong, Cafer T. Yavuz*, Han Gi Chae*, and Jong-Beom Baek* Scalable design of Ru-embedded carbon fabric using conventional carbon fiber processing for robust electrocatalysts, *Journal of the American Chemical Society* 146, 19, 13142–13150 (2024) <https://doi.org/10.1021/jacs.4c00332>
13. **Seok-Jin Kim**, Min Hui Kim, Se Jung Lee, Cafer T. Yavuz*, and In-Yup Jeon* Sustainable Gas Storage: CO₂ Activation of Edge-Functionalized Graphitic Nanoplatelets, *ChemSusChem* e202301145 (2024) <https://doi.org/10.1002/cssc.202301145>
14. Muhammad Bilal Asif, **Seok-Jin Kim**, Thien S. Nguyen, Javeed Mahmood, Cafer T. Yavuz* Highly efficient micropollutant decomposition by ultrathin amorphous cobalt-iron oxide nanosheets in peroxymonosulfate-mediated

- membrane-confined catalysis, *Chemical Engineering Journal* 485, 149352 (2024) <https://doi.org/10.1016/j.cej.2024.149352>
15. Rohit K. Rai, Raghu Maligal-Ganesh, Walid Almaksoud, **Seok-Jin Kim**, Yuvraj Vaishnav, Cafer T. Yavuz*, and Yoji Kobayashi* Enhancing Ammonia Synthesis on $\text{Co}_3\text{Mo}_3\text{N}$ via Metal Support Interactions on a Single-crystalline MgO Support, *ChemCatChem*, e202301579 (2024) <https://doi.org/10.1002/cctc.202301579>
 16. Muhammad Bilal Asif, **Seok-Jin Kim**, Thien S. Nguyen, Javeed Mahmood, and Cafer T. Yavuz* Covalent organic framework membranes and water treatment, *Journal of the American Chemical Society* 146, 6, 3567-3584, (2024) <https://doi.org/10.1021/jacs.3c10832>
 17. **Seok-Jin Kim**, Thien Si Nguyen, Javeed Mahmood*, and Cafer T. Yavuz* Sintering-free catalytic ammonia cracking by vertically standing 2D porous framework supported Ru nanocatalysts, *Chemical Engineering Journal* 463, 142474 (2023) <https://doi.org/10.1016/j.cej.2023.142474>
 18. Changqing Li, Su Hwan Kim, Hyeong Yong Lim, Qikun Sun, Yi Jiang, Hyuk-Jun Noh, **Seok-Jin Kim**, Jaehoon Baek, Sang Kyu Kwak,* and Jong-Beom Baek* Self-Accommodation Induced Electronic Metal-Support Interaction on Ruthenium Site for Alkaline Hydrogen Evolution Reaction, *Advanced Materials* 1369 (2023) <https://doi.org/10.1002/adma.202301369>
 19. Pravin Babar, Javeed Mahmood, Raghu V Maligal-Ganesh, **Seok-Jin Kim**, Zhonghua Xue and Cafer T. Yavuz* Electronic structure engineering for electrochemical water oxidation, *Journal of Materials Chemistry A* 10, 20218 (2022) <https://doi.org/10.1039/D2TA04833G>
 20. Seong-Wook Kim,+ Sein Chung,+ Gao-Feng Han, Jeong-Min Seo, Hyuk-Jun Noh, **Seok-Jin Kim**, Jong-Pil Jeon, Eunho Lee, Boseok Kang,* Javeed Mahmood,* Kilwon Cho,* and Jong-Beom Baek* Solution-Processable Semiconducting Conjugated Planar Network, *ACS Applied Materials & Interfaces* 14, 12, 14588-14595 (2022) <https://doi.org/10.1021/acsami.2c00368>
 21. Pravin Babar, Komal Patil, Javeed Mahmood, **Seok-Jin Kim**, Jin Hyeok Kim* and Cafer T. Yavuz* Low-overpotential overall water splitting by a cooperative interface of cobalt-iron hydroxide and iron oxyhydroxide, *Cell Reports Physical Science* 3, 100762 (2022) <https://doi.org/10.1016/j.xcrp.2022.100762>
 22. Gao-Feng Han, Feng Li,* Alexandre I. Rykov, Yoon-Kwang Im, Soo-Young Yu, Jong-Pil Jeon, **Seok-Jin Kim**, Junhu Wang, Wenhui Zhou, Rile Ge, Zhimin Ao, Hu Young Jeong* and Jong-Beom Baek,* Abrading bulk metal into single atoms, *Nature Nanotechnology* 17, 403-407 (2022) <https://doi.org/10.1038/s41565-022-01075-7>
 23. **Seok-Jin Kim**, Tea-Hoon Kim, Ishfaq Ahmad, Hyuk-Jun Noh, Sun-Min Jung, Yoon-Kwang Im, Javeed Mahmood,* Youn-Sang Bae,* and Jong-Beom Baek,* Fused aromatic network with the different spacial arrangement of structural units, *Cell Reports Physical Science* 2(7), 100502 (2021) <https://doi.org/10.1016/j.xcrp.2021.100502>
 24. Javeed Mahmood, Eun Kwang Lee, Hyuk-Jun Noh, Ishfaq Ahmad, Jeong-Min Seo, Yoon-Kwang Im, Jong-Pil Jeon, **Seok-Jin Kim**, Joon Hak Oh,* Jong-Beom Baek,* Fused Aromatic Network with Exceptionally High Carrier Mobility, *Advanced Materials* 33(9), 2004707, (2021) <https://doi.org/10.1002/adma.202004707>
 25. Gao-Feng Han, Feng Li, Zhi-Wen Chen,* Claude Coppel, **Seok-Jin Kim**, Hyuk-Jun Noh, Zhengping Fu, Yalin Lu, Chandra Veer Singh, Samira Siahrostami,* Qing Jiang* and Jong-Beom Baek* Mechanochemistry for ammonia synthesis under mild conditions, *Nature Nanotechnology* (2020) <https://doi.org/10.1038/s41565-020-00809-9>
 26. Feng Li, Gao-Feng Han,* Yunfei Bu,* Hyuk-Jun Noh, Jong-Pil Jeon, Tae Joo Shin, **Seok-Jin Kim**, Yuen Wu, Hu Young Jeong,* Zhengping Fu,* Yalin Lu und Jong-Beom Baek* Revealing Isolated $\text{M-N}_3\text{C}_1$ Active Sites for Efficient Collaborative Oxygen Reduction Catalysis, *Angewandte Chemie International Edition* 132, 2-8, (2020) <https://doi.org/10.1002/anie.202008325>
 27. Gao-Feng Han, Feng Li, Wei Zou, Mohammadreza Karamad, Jong-Pil Jeon, Seong-Wook Kim, **Seok-Jin Kim**, Yunfei Bu, Zhengping Fu, Yalin Lu, Samira Siahrostami*, Jong-Beom Baek* Building and identifying highly

- active oxygenated groups in carbon materials for oxygen reduction to H_2O_2 , *Nature Communications* 11, 2209, (2020) <https://doi.org/10.1038/s41467-020-15782-z>
28. Do Hyung Kweon, Mahmut Sait Okyay, **Seok-Jin Kim**, Jong-Pil Jeon, Hyuk-Jun Noh, Noejung Park, Javeed Mahmood*, Jong-Beom Baek* Ruthenium anchored on carbon nanotube electrocatalyst for hydrogen production with enhanced Faradaic efficiency, *Nature Communications* 11, 1278, (2020) <https://doi.org/10.1038/s41467-020-15069-3>
 29. Gao-Feng Han+, Xiang-Mei Shi+, **Seok-Jin Kim**, Jeonghun Kim, Jong-Pil Jeon, Hyuk-Jun Noh, Yoon-Kwang Im, Feng Li, Young Rang Uhm, Chul Sung Kim, Qing Jiang*, Jong-Beom Baek* Dissociating stable nitrogen molecules under mild conditions by cyclic strain engineering, *Science Advances* 5, eaax8275 (2019) DOI: [10.1126/sciadv.aax8275](https://doi.org/10.1126/sciadv.aax8275)
 30. Gao-Feng Han, Bei-Bei Xiao, **Seok-Jin Kim**, Feng Li, Ishfaq Ahmad, In-Yup Jeon, Jong-Beom Baek* Tuning edge-oxygenated groups on graphitic carbon materials against corrosion, *Nano Energy* 66, 104112 (2019) <https://doi.org/10.1016/j.nanoen.2019.104112>
 31. Feng Li+, Yunfei Bu+, Gao-Feng Han, Hyuk-Jun Noh, **Seok-Jin Kim**, Ishfaq Ahmad, Yalin Lu, Peng Zhang, Hu Young Jeong*, Zhengping Fu*, Qin Zhong, Jong-Beom Baek* Identifying the structure of Zn-N_2 active sites and structural activation, *Nature Communications* 10, 2623 (2019) <https://doi.org/10.1038/s41467-019-10622-1>
 32. **Seok-Jin Kim**, Gao-Feng Han, Sun-Min Jung, Jong-Pil Jeon, Sun-Hee Shin, Seong-Wook Kim, In-Yup Jeon*, Jong-Beom Baek* Oxidative Dehydrogenation of Ethylbenzene into Styrene by Fe-Graphitic Catalysts, *ACS Nano* 13, 5, 5893-5899 (2019) <https://doi.org/10.1021/acsnano.9b01664>
 33. Gao-Feng Han, Zhi-Wen Chen, Jong-Pil Jeon, **Seok-Jin Kim**, Hyuk-Jun Noh, Xiang-Mei Shi, Feng Li, Qing Jiang*, Jong-Beom Baek* Low-Temperature Conversion of Alcohols into Bulky Nanoporous Graphene and Pure Hydrogen with Robust Selectivity on CaO , *Advanced Materials* 1807267, (2019) <https://doi.org/10.1002/adma.201807267>
 34. Javeed Mahmood, Mohsin Ali Raza Anjum, Sun-Hee Shin, Ishfaq Ahmad, Hyuk-Jun Noh, **Seok-Jin Kim**, Hu Young Jeong*, Jae Sung Lee*, Jong-Beom Baek* Encapsulating Iridium Nanoparticles Inside a 3D Cage-Like Organic Network as an Efficient and Durable Catalyst for the Hydrogen Evolution Reaction, *Advanced Materials* 30(52), 1805606, (2018) <https://doi.org/10.1002/adma.201805606>
 35. Javeed Mahmood,+, **Seok-Jin Kim**,+ Hyuk-Jun Noh, Sun-Min Jung, Ishfaq Ahmad, Feng Li, Jeong-Min Seo, Jong-Beom Baek* A Robust 3D Cage like Ultramicroporous Network Structure with High Gas-Uptake Capacity, *Angewandte Chemie International Edition* 57(13), 3415-3420, (2018) <https://doi.org/10.1002/anie.201800218>
 36. **Seok-Jin Kim**, Javeed Mahmood, Changmin Kim, Gao-Feng Han, Seong-Wook Kim, Sun-Min Jung, Guomin Zhu, James J De Yoreo, Guntae Kim*, Jong-Beom Baek* Defect-Free Encapsulation of Fe^0 in 2D Fused Organic Networks as a Durable Oxygen Reduction Electrocatalyst, *Journal of the American Chemical Society* 140, 5, 1737-1742, (2018) <https://doi.org/10.1021/jacs.7b10663>
 37. Feng Li, Gao-Feng Han, Hyuk-Jun Noh, **Seok-Jin Kim**, Yalin Lu, Hu Young Jeong*, Zhengping Fu*, Jong-Beom Baek* Boosting oxygen reduction catalysis with abundant copper single atom active sites, *Energy & Environmental Science* 11(8), 2263-2269, (2018) <https://doi.org/10.1039/C8EE01169A>
 38. Seo-Yoon Bae, Dongwook Kim, Dongbin Shin, Javeed Mahmood, In-Yup Jeon, Sun-Min Jung, Sun-Hee Shin, **Seok-Jin Kim**, Noejung Park*, Myoung Soo Lah*, Jong-Beom Baek* Forming a three-dimensional porous organic network via solid-state explosion of organic single crystals, *Nature Communications* 8(1), 1599, (2017) <https://doi.org/10.1038/s41467-017-01568-3>
 39. Feng Li, Xianglong Zhao, Javeed Mahmood, Mahmut Sait Okyay, Sun-Min Jung, Ishfaq Ahmad, **Seok-Jin Kim**, Gao-Feng Han, Noejung Park*, Jong-Beom Baek* Macroporous Inverse Opal-like Mo_xC with Incorporated Mo

Vacancies for Significantly Enhanced Hydrogen Evolution, *ACS Nano* 11(7), 7527-7533, (2017)
<https://doi.org/10.1021/acsnano.7b04205>

40. Javeed Mahmood, Feng Li, Sun-Min Jung, Mahmut Sait Okay, Ishfaq Ahmad, **Seok-Jin Kim**, Noejung Park*, Hu Young Jeong*, Jong-Beom Baek* An efficient and pH-universal ruthenium-based catalyst for the hydrogen evolution reaction, *Nature Nanotechnology* 12(5), 441, (2017) <http://dx.doi.org/10.1038/nnano.2016.304>
41. Jiantie Xu, In-Yup Jeon, Jianmin Ma, Yuhai Dou, **Seok-Jin Kim**, Jeong-Min Seo, Huakun Liu, Shixue Dou, Jong-Beom Baek*, Liming Dai* Understanding of the capacity contribution of carbon in phosphorus-carbon composites for high-performance anodes in lithium ion batteries, *Nano Research* 10(4), 1268-1281, (2017)
<https://doi.org/10.1007/s12274-016-1383-4>
42. Jiantie Xu, In-Yup Jeon, Hyun-Jung Choi, **Seok-Jin Kim**, Sun-Hee Shin, Noejung Park, Liming Dai, Jong-Beom Baek* Metalated graphene nanoplatelets and their uses as anode materials for lithium-ion batteries, *2D Materials* 4(1), 014002, (2016) <https://doi.org/10.1088/2053-1583/4/1/014002>
43. Javeed Mahmood, Sun-Min Jung, **Seok-Jin Kim**, Jungmin Park, Jung-Woo Yoo*, Jong-Beom Baek* Cobalt Oxide Encapsulated in C₂N-h2D Network Polymer as a Catalyst for Hydrogen Evolution, *Chemistry of Materials* 27(13), 4860-4864, (2015) <https://doi.org/10.1021/acs.chemmater.5b01734>

SCHOLARLY ACTIVITIES

Peer reviewer for journals

Science // Nature Communications // Nature Sustainability // Nature Chemistry // Science Advances // Applied Catalysis B: Environmental // Angewandte Chemie // Journal of Nanotechnology // Journal of Catalysis // Energy Conversion and Management // New Journal of Chemistry // Advanced Materials // Carbon // Small // Chem Catalysis // Discover Energy // Chemical Engineering Journal // Catalysis Letters // ACS Applied Nano Materials // Journal of Materials Science Composites // Beilstein Journal of Nanotechnology

Oral presentation at international conferences

- **Jul. 07–10, 2026** C1Chem, Le Touquet Paris Plage, **France** “Syngas Economy for Rapid Decarbonization of Fuels and Chemicals”
- **May 31–Jun. 4, 2026** GCIM 2026, Jeju, **South Korea** “Edge-Directed Nanocatalyst Stabilization on Single-Crystal Oxides” (Invited speaker)
- **Dec. 14–20, 2025** Pacificchem 2025, **Hawaii, US** “The Dawn of Single Crystalline Supports in Heterogeneous Catalysis”
- **Jun. 22–27, 2025** Cluster meeting 2025, **Czech Republic** “Exploring NOSCE Behavior in the Dry Reforming Reaction” (*Selected as Hot Topic, Awarded Nanoscale Journal Family Prize*)
- **May 26–30, 2025** eMRS spring 2025, Strasbourg, **France** “Scalable Fabric Electrodes for Sustainable Carbon Catalyst Preparation”
- **Sep. 8–9, 2024** ENOWA-KAUST Inaugural Energy Summit 2024, **Saudi Arabia** “Advanced electrode development for enhanced water electrolysis efficiency and lifetime”
- **Jul. 3–5, 2024** NANO KOREA 2024, **South Korea** “Scalable fabric electrode for electrochemical catalytic reaction”
- **Jun. 18–23, 2023** Cluster meeting 2023, **Czech Republic** “Engineering catalyst support for improved ammonia decomposition”
- **Mar. 25–30, 2023** ACS spring meeting, **US** “Dry reforming of n-butane and contaminated feeds over Ni-Mo nanocatalysts on single-crystalline MgO”
- **Mar. 13–15, 2023** KAUST AMPM center, **Saudi Arabia** “Triptycene-based fused aromatic networks and their gas adsorption properties.”
- **Feb. 13–16, 2023** KAUST Research Conference 2023, **Saudi Arabia** “Dry reforming of hydrocarbon over nanocatalysts on single-crystalline support”

- **Aug. 28–Sep. 1, 2022** International Symposium on Porous Organic Polymers (POPs 2022), **US** “Triptycene-based fused aromatic networks and their gas adsorption properties”
- **Aug. 21–25, 2022** ACS fall meeting, **US** “Syngas economy for rapid decarbonization of fuels and chemicals”
- **Jan. 19–21, 2022** European Young Chemists Meeting, **Switzerland** “Two-dimensional fused aromatic networks with perpendicularly standing structural units”
- **Nov. 29–Dec. 2, 2021** MRS fall meeting, **US** “Perpendicularly standing two-dimensional fused aromatic network structure”
- **Nov. 12–14, 2019** Beilstein Institute-New Directions for Nanoporous Materials Rüdesheim, **Germany** “Mechanochemical Strategy: Control of Fe-Graphitic Nanostructure for Oxydative Dehydrogenation Catalysis”
- **Nov. 25–30, 2018** MRS fall meeting, Boston, **US** “Encapsulation of Fe⁰ in 2D Fused Aromatic Networks as an Oxygen Reduction Electrocatalyst” *SESSION CHAIR*
- **Aug. 26–30, 2018** 7th EuCheMS Chemistry Congress, Liverpool, **UK** “Fe⁰ Cocooned in 2D Organic Networks as a Durable Oxygen Reduction Electrocatalysis”
- **Oct. 18–22, 2014** 5th A3 Symposium on Emerging Materials: sp² Nanocarbon for Energy 2014 Tianjin, **China** “Direct Solvothermal Synthesis of Boron and Nitrogen-Doped Graphene”

REFERENCES

1. Prof. Cafer T. Yavuz

Professor of Chemical Science, Division of Physical Science and Engineering/KAUST, Saudi Arabia

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Relationship: Academic advisor from postdoc to present

2. Prof. Jong-Beom Baek

Distinguished Professor/Director, Department of Energy and Chemical Engineering/UNIST, Korea

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Relationship: Academic advisor from intern to Ph.D. program

3. Prof. Gao-Feng Han

Professor of Department of Metallic Materials Engineering/Jilin University, China

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Relationship: Collaborator on Several Projects and Co-author on a publication

4. Dr. Javeed Mahmood

Senior Research Scientist/Physical Science and Engineering/KAUST, Saudi Arabia

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Relationship: Collaborator on several projects and co-author on a publication