



Dr. Muhammad Zubair Khan

Assistant professor (Department of Materials Science & Engineering)

PAF-IAST, Mang, Haripur

zubair.khan@fcm3.paf-iast.edu.pk

Office Contact No# 0995-933330

<https://www.researchgate.net/profile/Muhammad-Zubair-Khan>

Education

- **PhD (2018):** Advanced Energy and System Technology, Korea University of Science and Technology (UST), South Korea. Thesis title: Degradation Analysis and Lifetime Prediction Modeling of Anode-Supported Solid Oxide Fuel Cell
- **MS. (2014):** Advanced Energy and Technology, Korea University of Science and Technology (UST), South Korea. Thesis title: Durability Studies of Solid Oxide Fuel Cells with Gadolinia-doped Ceria (GDC) Interlayers under Accelerated Conditions

Experience

1: Teaching Experience:

- **Assistant Professor** at Department of Materials Science & Engineering, Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology (PAF-IAST), Mang, Haripur, Pakistan | Jan. 2021 – current | www.paf-iast.edu.pk
- **Assistant Professor** at Faculty of Materials and Chemical Engineering, GIK Institute of Engineering Sciences and Technology, Topi, Swabi, Pakistan | Jan. 2020 – Jan 2021 | www.giki.edu.pk

2: Research Experience:

- **Postdoctoral Researcher** at Fuel Cell Research Laboratory, Korea Institute of Energy Research (KIER), South Korea | Sept. 2018 – Apr. 2019 | www.kier.re.kr
- **Research Scientist** at Clean Fuel Laboratory, Korea Institute of Energy Research (KIER), South Korea | Mar. 2014 –Feb. 2015 | www.kier.re.kr

Projects & Awards

- **06 International Research Excellence Awards** from Korea Institute of Energy Research (KIER), Korea University of Science and Technology (UST), Korea Hydrogen and New Energy Society and Twenty-sixth International Conference on the Processing and Fabrication of the Advanced Materials (PFAM-XXVI), South Korea.

Patent & Publications

27 International Publications in ISI indexed journals, cumulative impact factor of 120+, h-index 11:

Google Scholar Link: <https://scholar.google.co.kr/citations?user=GPiCAoAAAAJ&hl=en>

- S. Kim, D.W. Joh, D.Y. Lee, J. Lee, H.S. Kim, **M.Z. Khan**, J.E. Hong, S.B. Lee, S.J. Park et al. Microstructure tailoring of solid oxide electrolysis cell air electrode to boost performance and long-term durability, **Chemical Engineering Journal**, 410 (2021) 128318. <https://doi.org/10.1016/j.cej.2020.128318>.
- M.T. Mehran, T.H. Kim, **M.Z. Khan**, S.B. Lee, T.H. Lim, R.H. Song, Highly durable nano-oxide dispersed ferritic stainless steel interconnects for intermediate temperature solid oxide fuel cells, **Journal of Power Sources**, 439 (2019) 227109. <https://doi.org/10.1016/j.jpowsour.2019.227109>
- **M.Z. Khan**, M.T. Mehran, R.H. Song, J.W. Lee, S.B. Lee, T.H. Lim, A simplified approach to predict performance degradation of a solid oxide fuel cell anode, **Journal of Power Sources**, 391 (2018), 94-105. <https://doi.org/10.1016/j.jpowsour.2018.04.080>
- **M.Z. Khan**, R.H. Song, A. Hussain, S.B. Lee, T.H. Lim, J.E. Hong, Effect of applied current density on the degradation behavior of anode-supported flat-tubular solid oxide fuel cells, **Journal of the European Ceramic Society**, 40 (2020) 1407-1417. <https://doi.org/10.1016/j.jeurceramsoc.2019.11.017>.
- M.T. Mehran, **M.Z. Khan**, T.H. Lim, S.B. Lee, R.H. Song, Effect of nano-Al₂O₃ addition on mechanical durability of nickel-yttria stabilized zirconia anode support of solid oxide fuel cells, **Ceramics International**, 44 (2018) 14824-14833. <https://doi.org/10.1016/j.ceramint.2018.05.114>
- M.T. Mehran, **M.Z. Khan**, S.B. Lee, T.H. Lim, S. Park, R.H. Song, Improving sulfur tolerance of Ni-YSZ anodes of solid oxide fuel cells by optimization of microstructure and operating conditions, **International Journal of Hydrogen Energy**, 43 (2018) 11202-11213. <https://doi.org/10.1016/j.ijhydene.2018.04.200>