

CURRICULUM VITAE

Personal Profile

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Objective

To work in a dynamic organization where advancements are based on achievements, aspiring to utilize my technical skills to the maximum, while contributing to achieving a new high in organization excellence.

Education Background

Assistant Professor: Institute of Chemical Sciences, University of Swat, KP, Pakistan (**December 29th 2023 up-to-date**)

Research Associate/PostDoc/Assistant Professor: Institute of Chemical Sciences, University of Swat, KP, Pakistan (**January 1st 2021 to March 31st 2023**)

Post-Doctorate Fellowship: University of Electronic Science and Technology of China, Chengdu, Sichuan, China. (**01-Jan-2020 to 31-Dec-2022**)

Project: Effect of Nitrogen Functional Group on Metal-organic Framework for Flexible Lithium-ion Batteries.

Ph.D.: (New Energy Science and Engineering) Soochow Institute for Energy and Materials Innovations, College of Physics, Optoelectronics and Energy, Soochow University, Suzhou 215006, China, **2015-09 to 2019-06.**

Thesis Title: Elastomeric Composites for Flexible Energy Storage Devices and their Structural, Mechanical and Performance Characteristics.

M.Phil: (Inorganic/Analytical Chemistry) Hazara University Manshera KPK, Pakistan, **2012-09 to 2014-07.**

Thesis Title: Preparation and Properties of Novel Polymer/graphene-based Nanofluids with Increased Thermal Conductivity.

Publications:

- 1) [Rahim Shah](#), Fazal Raziq, Sharafat Ali, Sajjad Ali, Pir Muhammad Ismail, Sayed Shah, Xiaoqiang Wu, Weidong He, Xiaotao Zu, Amir Zada, Adnan, Fazal Mabood, Ajayan Vinu, Jiabao Yi, and Liang Qiao. Exploration of Metal-Organic Frameworks and Covalent Organic Frameworks for Energy-related Applications: **Coordination Chemistry Reviews**. (IF: 24.833)
- 2) [Rahim Shah](#), Sajjad Ali, Sharafat Ali, Pengfei Xia, Fazal Raziq, Adnan, Fazal Mabood, Sayed Shah, Amir Zada, Pir Muhammad Ismail, Asif Hayat, Ata Ur Rehman, Xiaoqiang Wu, Haiyan Xiao, Xiaotao Zu, Sean Li. Amino Functionalized Metal-Organic Framework/rGO Composite Electrode for Flexible Li-Ion Batteries: **Journal of Alloys and Compounds**. <https://doi.org/10.1016/j.jallcom.2022.168183> (IF: 6.371)
- 3) [Rahim Shah](#), Gu Jin-Yu, Amir A. Razzaq, Xiaohui Zhao, Xiao-Wei Shen, Li xiao Miao, Cheng-Lin Yan, Yang Peng, and Zhao Deng. "Freestanding Electrode Pairs with High Areal Density Fabricated under High Pressure and High Temperature for Flexible Lithium Ion Batteries." **ACS Applied Energy Materials** 2018, 1, 3171–3179 DOI: 10.1021/acsaem.8b00388. (IF = 6.959)
- 4) [Rahim shah](#), Naveed Alam, Amir A. Razzaq, Cheng yang, Jiapang Hu, yujie Chen, Xiaohui Zhao, Yang Peng, Zhao Deng. Effect of Binder Conformity on the Electrochemical Behaviour of Graphite Anodes with Different Particle Shapes. **Acta Physico-Chimica Sinica** 2019, 35 (12), 1382-1390 DOI: 10.3866/PKU.WHXB201903060. (IF = 2.268)
- 5) [Rahim Shah](#), Ayesha Kausar, Bakhtiar Muhammad, Sayed Shah. Progression from Graphene and Graphene Oxide to High Performance Polymer-Based Nanocomposite: A Review. **Polymer-Plastics Technology and Engineering** 2015, 54: 173–183. DOI:10.1080/03602559.2014.955202. (IF = 3.267)
- 6) [Rahim shah](#), Ayesha Kausar, Bakhtiar Muhammad. Exploration of Polythiophene/Graphene, Poly(methyl methacrylate)/Graphene and PTh-co-PMMA/Graphene nanocomposites obtained via in-situ Technique. **Journal of Plastic Film & Sheeting** 2015, 31 144–157 DOI: 10.1177/8756087915572934. (IF = 2.75)
- 7) [Rahim shah](#), Ayesha Kausar, Bakhtiar Muhammad. Characterization and Properties of Poly(methyl methacrylate)/Graphene, Poly(methyl methacrylate)/Graphene Oxide and Poly(methyl methacrylate)/pPhenylenediamine-Graphene Oxide Nanocomposites. **Polymer-Plastics Technology and Engineering** 2015, 54, 1334-1342. DOI:10.1080/03602559.2015.1010220. (IF = 3.267)

- 8) [Rahim Shah](#), Ayesha Kausar, Bakhtiar Muhammad, Muhammad Khan. Investigation on Thermal Conductivity and Physical Properties of Polythiophene/p-Phenylenediamine-Graphene Oxide and Polythiophene-co-Poly(methyl methacrylate)/p-Phenylenediamine Graphene oxide Composites. *Composite Interfaces* 2016, 23(9): 887-899. DOI: [10.1080/09276440.2016.1175198](https://doi.org/10.1080/09276440.2016.1175198). (IF = 2.839)
- 9) Tariq Ali, Haiyan Wang, Waseem Iqbal, Tariq Bashir, [Rahim Shah](#), Yong Hu. Electro-Synthesis of Organic Compounds with Heterogeneous Catalysis. *Advanced Science* 2022, 2205077 DOI: [10.1002/advs.202205077](https://doi.org/10.1002/advs.202205077) (IF: 17.52).
- 10) Razzaq, Amir Abdul, Yuanzhou Yao, [Rahim Shah](#), Pengwei Qi, Lixiao Miao, Muzi Chen, Xiaohui Zhao, Yang Peng, and Zhao Deng. "High-performance lithium-sulfur batteries enabled by a synergy between sulfur and carbon nanotubes." *Energy Storage Materials* 16 (2019) 194–202 DOI: [10.1016/j.ensm.2018.05.006](https://doi.org/10.1016/j.ensm.2018.05.006). (IF = 20.831)
- 11) Chen Yujie, Xietao Yuan, Cheng Yang, Yuebin Lian, Amir Abdul Razzaq, [Rahim Shah](#), Jun Guo, Xiaohui Zhao, Yang Peng, and Zhao Deng. " γ -Fe₂O₃ nanoparticles embedded in porous carbon fibers as binder-free anodes for high-performance lithium and sodium ion batteries." *Journal of Alloys and Compounds* 777 (2019): 127-134 DOI: [10.1016/j.jallcom.2018.10.371](https://doi.org/10.1016/j.jallcom.2018.10.371). (IF = 6.371)
- 12) Cheng Yang, Yu Yao, Yuebin Lian, Yujie Chen, [Rahim Shah](#), Xiaohui Zhao, et al. A Double-Buffering Strategy to Boost the Lithium Storage of Botryoid MnO_x/C Anodes. *Small* (2019): p:1900015 DOI: [10.1002/sml.201900015](https://doi.org/10.1002/sml.201900015) (IF = 15.15)
- 13) Yuanzhou Yao, Xiaohui Zhao, Amir Abdul Razzaq, Yuting Gu, Xietao Yuan, [Rahim Shah](#), Yuebin Lian, Jinxuan lei, Qiaoqiao Mu, et al. Mosaic Graphene Layer on Lithium Metal Anodes for Effective Mediation of Lithium Plating and Stripping *Journal of Materials Chemistry A* 7 (2019):12214-12224 DOI: [10.1039/C9TA03679B](https://doi.org/10.1039/C9TA03679B). (IF = 14.51)
- 14) Yong Ma, Yuting Gu, Yuanzhou Yao, Huidong Jin, Xiaohui Zhao, Xietao Yuan, Yuebin Lian, Pengwei Qi, [Rahim Shah](#), Yang Peng, and Zhao Deng Alkaliphilic Cu₂O nanowires on copper foam for hosting Li/Na as ultrastable alkali-metal anodes. *Journal of Materials Chemistry A* (2019) DOI: [10.1039/C9TA08687K](https://doi.org/10.1039/C9TA08687K). (IF = 14.511)
- 15) Ata Ur Rehman, Muhammad Zahir Shah, Aamir Ali, Tianyu Zhao, [Rahim Shah](#), Ihsan Ullah, Hazrat Bilal, Ahsan Riaz Khan, Muhammad Iqbal, Asif Hayat, Maosheng Zheng "Thermochemical heat storage ability of ZnSO₄ ·7H₂O as potential long-term heat storage material. *International Journal of Energy Research* DOI: <https://doi.org/10.1002/er.6077> (IF = 5.164)
- 16) Razzaq, Amir Abdul, Ganwen Chen, Xiaohui Zhao, Xietao Yuan, Jiapeng Hu, Ziwei Li, Yufeng Chen, [Rahim Shah](#), Jun Zhong, YangPeng, ZhaoDeng "Cobalt coordination with pyridines in sulfurized polyacrylonitrile cathodes to form conductive pathways and catalytic M-N₄S sites for accelerated Li-S kinetics" *Journal of Energy Chemistry* (2021) DOI: [10.1016/j.jechem.2021.01.012](https://doi.org/10.1016/j.jechem.2021.01.012) (IF: 13.599)
- 17) Ata Ur Rehman, Muhammad Zahir Shah, Wasim Afza, Muhammad Arsalan, Habib ur Rehman, Mati Ullah, Tianyu Zhao, Ihsan Ullah, Ala Ud Din, Saif Ullah, [Rahim Shah](#), Muhammad Iqbal,

- Zheng Maosheng, Zheng-Hui Guan “Inorganic salt hydrates and zeolites composites studies for thermochemical heat storage” *Zeitschrift für Physikalische Chemie*. DOI: 10.1515/zpch-2021-3012 (IF: 2.408)
- 18) Tayiba Ilyas Fazal Raziq, Sharafat Ali, Amir Zada, Nasir Ilyas, [Rahim Shah](#), Yong Wang, and Liang Qiao. Facile Synthesis of MoS₂/Cu as Trifunctional Catalyst for Electrochemical Overall Water Splitting and Photocatalytic CO₂ Conversion. *Materials & Design* 2021 Mar 24:109674. DOI: <https://doi.org/10.1016/j.matdes.2021.109674> (IF: 9.417)
 - 19) Asif Hayat, Muhammad Sohail, T.A. Taha, Asma M. Alenad, Ikram Uddin, Ashiq Hayat, Tariq Ali, [Rahim Shah](#), et al. A Superficial Intramolecular Alignment of Carbon Nitride through Conjugated Monomer for Optimized Photocatalytic CO₂ Reduction. *Catalysts* 30 July 2021 <https://doi.org/10.3390/catal11080935> (IF: 4.501)
 - 20) Fazal Raziq, Amil Aligayev, Huahai Shen, Sharafat Ali, [Rahim Shah](#), et al. Exceptional Photocatalytic Activity of rGO Modified (B, N) Co-doped WO₃ Coupled with CdSe QDs for One Photon Z-scheme System, A Joint Experimental and DFT Study. *Advanced Science*. 03 Dec 2021 <https://doi.org/10.1002/advs.202102530> (IF: 17.52)
 - 21) Sharafat Ali, Sajjad Ali, Pir Muhammad Ismail, Huahai Shen, Amir Zada, Asad Ali, Ismail Ahmad, [Rahim Shah](#), Imran Khan et al, Synthesis and bader analyzed cobalt-phthalocyanine modified solar UV-blind β-Ga₂O₃ quadrilateral nanorods photocatalysts for wide-visible-light driven H₂ evolution. *Applied Catalysis B: Environmental*. 5 June 2022 <https://doi.org/10.1016/j.apcatb.2022.121149> (IF: 24.319)
 - 22) Asif Hayat, Muhammad Sohail, Mohamed S Hamdy, TA Taha, Huda Salem AlSalem, Mohammed A Amin, [Rahim Shah](#), et al Fabrication, Characteristics, and Applications of Boron Nitride and their Composite Nanomaterials. *Surfaces and Interfaces*. 10 Jan 2022 <https://doi.org/10.1016/j.surfin.2022.101725> (IF: 6.137)
 - 23) Adnan Adnan *, Muhammad Omer *, Behramand Khan, Inkisar Khan, Muhammad Alamzeb, Farah Muhammad Zada, Ihsan Ullah, [Rahim Shah](#), Mohammad Alqarni, Jesus Simal-Gandara. Equilibrium, Kinetic and Thermodynamic Studies for The Adsorption of Metanil Yellow using Carbonized Pistachio Shell-Magnetic Nanoparticles. *Water*, (IF= 3.166)
 - 24) Rashid Mehmood, Zia Ahamd, Muhammad Bilal Hussain, Muhammad Athar, Ghulam Akbar, Zeeshan Ajmal, Sikandar Iqbal, Rameez Razaq, Mohammad Arif Ali, Abdul Qayum, Aadil Nabi Chisti, Fakhar uz Zaman, [Rahim Shah](#) and Adnan. 2D-2D heterostructure g-C₃N₄-based materials for photocatalytic H₂ evolution: Progress and perspectives. *Frontier in Chemistry* (IF: 5.545)
 - 25) Ata Ur Rehman, Tianyu Zhao, Ihsan Muhammad, Shehla Rasheed, [Rahim Shah](#), Adnan Raza Altaf, Fumin Zhang, Sining Yun. MgCl₂-MXene based nanohybrid composite for efficient thermochemical heat storage application *Journal of Energy Storage* (IF: 8.907)
 - 26) Suad N. Alsaqri, Fazal Mabood, Ricard Boqué, Farah Jabeen, Aziz Ahmad, Javid Hussain, Muhammad Sohail, Mian Gul Syed, Saad Melhi, Adnan Shahzad, Muhammad Naeem Khan, Issa

Al-Amri, [Rahim Shah](#), Imad Ud Din. Rapid detection of pork gelatin in ice cream samples by using non-destructive FT-NIR spectroscopy and Partial least squares-discriminant analysis *Food Chemistry Advances*.

Publication (in progress):

1. Synthesis of porous carbon and their applications in lithium-sulfur batteries.
2. Synthesis of Doped porous carbon and their application in energy storage devices.
3. Recent progress on carbon metal oxide Nano-composites for flexible lithium-sulfur batteries.
4. Recent Trend in Metal-Organic Framework (MOFs) for lithium-sulfur batteries.
5. The rise of Mxene for energy storage devices. A Review

Project participation:

- 1) **2016-2019** Preparation and mechanical characterization of elastomeric graphene composites for flexible power supplies, Jiangsu Natural Science Foundation.
- 2) **2017-2020** Research on Nanomechanics of Graphene Composites, Six Talents Summit Program of Jiangsu Province.
- 3) **2017-2020** Flexible self-supporting sulfur/carbon fibres composites for lithium-sulfur battery cathode research, Jiangsu Natural Science Foundation Project.

Rewards:

2015 CSC Scholarship for High Technology (to Pursue PhD Research)

2017 Annual Jiangsu Provincial Graduate Research and Practice Innovation Program.

2017 3rd Prize of the 2nd Graduate Academic Carnival Huaqi Scholarship of the Institute of Energy and Materials Innovation.

Workshops/Conferences/Seminars Attended:

- International Scientific Spring **2014** (ISS) NCP Islamabad.
- Fundamental of Rechargeable Li-ion Batteries and the Modern Worlds, Institute of Chemical Sciences University of Swat (**20-05-2022**).
- International conference on Research Advancements in Chemistry, National University of Science and Technology Islamabad (**24-08-2022**)
- 5th PAK-TURK International Conference in new technologies in engineering sciences, University of Wah. (**01-12-2022**)
- Two days workshop on ‘Hands-On Lithium-ion Batteries’ Institute of Chemical Sciences, University of Swat, Swat, KP Pakistan (**December 8-9, 2022**)
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Skills:

Synthesis & characterization of different nano-particles.

Fabrication of flexible electrodes for energy storage devices.

Experience on handling SEM, XRD, CV, FTIR, TGA, BET etc. machines.

Co-curricular Activities:

- 1) Responsible for the organizing and managing the activities in Soochow University and also in my home village in social sector.
 - 2) Creativity, Problem Solving, leadership. Able to meet deadline.
 - 3) Ability to work independently as well as with team.
 - 4) Good Communication skills.
 - 5) Highly motivated and active in social activities, volunteer ship and scouting etc.
 - 6) To find and learn the latest (New) Software's of Different types.
 - 7) Surfing the Internet and Listening Music.
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References

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