

## CURRICULUM VITAE

### **PROF. DR. ZAHOOR-UL-HUSSAIN AWAN**

Department of Polymer & Petrochemical Engineering,  
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### **Career Objectives**

- To secure position in the higher management of a growing organization where I can practice my Educational and Professional skills for the benefit of organization & my career growth.

### **Qualification Highlights**

- More than 15 years of teaching experience at university level.
- I am self-motivated, possess good communication, analytical skills and good business understanding, work well in both an individual and team environment and have the ability to keep up with emerging technologies.

### **Academic Qualifications**

2011- 08/2014            Ph.D. (Chemical Engineering), Chonbuk National University, Jeonju, Republic of Korea

Dissertation title: Evaluation of electrocatalytic properties of nanostructured manganese oxides for nonaqueous lithium-air batteries.

2009-12/2010            Master (Chemical Engineering), N.E.D.University of Engineering & Technology Karachi, Pakistan

1995-2000                Bachelor of Engineering (Mechanical), NED University of Engineering & Technology, Karachi, Pakistan.

1992-1994                Bachelor of Science, University of Karachi, Pakistan.

### **Work Experience**

**13-03-2020- till date      Chairperson, Department of Food Engineering, NED University of Engineering & Technology, Karachi, Pakistan**

08/2020- till date        Professor, Department of Polymer & Petrochemical Engineering Department, NED University of Engineering & Technology, Karachi, Pakistan

07/2017- 03/2020        Associate Professor, Department of Chemical Engineering, NED University of Engineering & Technology, Karachi, Pakistan

12/2014-07/2017        Assistant Professor, Department of Chemical Engineering, NED University of Engineering & Technology, Karachi, Pakistan.

10/2008- 12/2014      Lecturer, Department of Chemical Engineering, NED University of Engineering & Technology, Karachi, Pakistan.

04/2007-09/2008      Lecturer, S.M.A. Rizvi Textile Institute Karachi, Pakistan.

01/2006-04 /2007      Lecturer, Institute of Textile technology & Management, Karachi, Pakistan.

04/2000-2002          Sealing devices Specialist, Marine Services Pvt. Limited. Karachi, Pakistan.

### **Courses Conducted**

#### **Graduate Level Courses:**

Advanced Process Control.  
Advanced Reaction Engineering

#### **Undergraduate Level Courses**

Fluid Mechanics  
Chemical Process Control  
Chemical Plant Design.  
Industrial Organization & Management

### **Projects Supervised**

- Synthesis and Characterization of Transition Metal Oxides as Low Cost Catalyst for energy storage devices.
- Heat Transfer Characteristics of Nano-Composites Materials.
- Synthesis and Characterization of highly conductive graphene oxide as electrode materials for high capacity batteries.
- Drinking Water Treatment Parameters affecting overall efficiency of the process.
- Terephthalic Acid Plant design unit Increased Methyl Acetate Recovery.

### **Other Responsibilities**

ISO 9001: 2008 Area Coordinator.  
ISO Internal Quality Auditor.  
Class advisor for the Final year Chemical Engineering  
Project advisor for the final year students (2009-2011).  
Final year Chemical Engineering Projects Coordinator (2009-2011).

### **Professional membership**

Pakistan Engineering Council (PEC).  
Registration No: MECH/15746

### **Achievements**

HEC Approved Ph.D. Supervisor.

Technical Committee Member FluidsChe 2017 **Universiti Malaysia PAHANG**.  
(<http://fluidsche.ump.edu.my/index.php/en/info/slideshow>).

**Editorial Board Member** “Journal of Innovative Research”  
SCIENCEVIER

As Conference Secretary Organized “**First International Conference on Advanced Materials & Process Engineering**” at NED University in 2015. ([www.nedampe.com](http://www.nedampe.com))

As Conference Secretary Organized “**Second International Conference on Advanced Materials & Process Engineering**” at NED University in 2017. ([www.nedampe.com](http://www.nedampe.com))

As Conference Secretary Organized “**Third International Conference on Advanced Materials & Process Engineering**” at NED University in 2019. ([www.nedampe.com](http://www.nedampe.com))

Best Poster award in International Lithium Air Battery Symposium (ILAB) Seoul (South Korea) 4-6<sup>th</sup> October, 2013.

### Language Skills

English	Able to read, write and speak fluently.
German	Able to read, write and speak fluently.
Korean	Able to read and write.

### Publications in International/SCI Journals:

1. **Awan Zahoor**, Maria Christy, Yun Ju Hwang, and Kee Suk Nahm “Lithium Air Battery: Alternate Energy Resource for the Future” **Journal of Electrochemical Science and Technology** Vol. 3, No. 1, 2012, 14-23. (<http://dx.doi.org/10.5229/JECST.2012.3.1.14>)
2. **Awan Zahoor**, Maria Christy, Yun Ju Hwang, Yi Rang Lim, Pil Kim, Kee Suk Nahm, “Improved electrocatalytic activity of carbon materials by nitrogen doping” **Applied Catalysis B: Environmental** 147 (2014) 633– 641. *I.F: 6.007*
3. G. Gnana Kumar, **Zahoor Awan**, Kee Suk Nahm, J. Stanley Xavier “Nanotubular MnO<sub>2</sub>/graphene oxide composites for the application of open air-breathing cathode microbial fuel cells” **Biosensors and Bioelectronics** 53 (2014) 528–534. *I.F: 6.45*
4. K. Justice Babu, **Awan Zahoor**, Kee Suk Nahm, R. Ramachandran, M. A. Jothi Rajan, G. Gnana kumar “The influence of shape and structure of MnO<sub>2</sub> nanomaterials over the non-enzymatic sensing ability of hydrogen peroxide” **J Nanopart Res** (2014) 16:2250. *I.F: 2.27*
5. **Awan Zahoor**, Ho Saeng Jang, Jeong Suk Jeon, Maria Christy, Yun Ju Hwang, Kee Suk Nahm “Comparative study of nanostructured  $\alpha$  and  $\delta$ -MnO<sub>2</sub> for lithium oxygen battery application” **RSC Adv.**, 2014, 4, 8973. *I.F: 3.708*
6. **Awan Zahoor**, Jeong Suk Jeon, Ho Saeng Jang, Maria Christy, Kee Suk Nahm “Mechanistic Study on Phase and Morphology Conversion of MnO<sub>2</sub> Nanostructures Grown by Controlled Hydrothermal Synthesis” **Science of Advanced Materials** Vol. 6, pp. 2712–2723, 2014. *I.F: 2.908*

7. **Awan Zahoor**, Maria Christy, Yunju Hwang, Yun Sung Lee, Kee Suk Nahm “Increasing the reversibility of Li–O<sub>2</sub> batteries with MnO<sub>2</sub> grown on GNF as bifunctional catalysts for oxygen reduction in the air cathode” **Electrochimica Acta** **157** (2015) 299–306 .  
*I.F: 4.086*
8. Ho Saeng Jang, **Awan Zahoor**, Maria Christy, Kee Suk Nahm “Sea urchin shaped  $\alpha$ -MnO<sub>2</sub>/RuO<sub>2</sub> mixed oxides nanostructure as promising air cathode catalyst for lithium air battery” **Journal of The Electrochemical Society**, **162** (3) A300-A307 (2015).*I.F: 2.859*
9. **Awan Zahoor**, Maria Christy, Jeong Suk Jeon, Yun Sung Lee, Kee Suk Nahm “Improved lithium–O<sub>2</sub> battery performance by addition of Pd nanoparticles on the MnO<sub>2</sub> bifunctional catalyst” **J Solid State Electrochem** DOI: 10.1007/s 10008-015-2739-5.  
*I.F: 2.234.*
10. Zafar Khan Ghouri, M. Shaheer Akhtar, **Awan Zahoor**, Nasser A.M. Barakat, Weidong Han, Mira Park, Bishweshwar Pant, Prem Singh Saud, Cho Hye Lee, Hak Yong Kim “High-efficiency super capacitors based on hetero-structured  $\alpha$ -MnO<sub>2</sub> nanorods” **Journal of Alloys and Compounds** **642** (2015) 210–215. *I.F: 2.7.*
11. Zafar Khan Ghouri , **Awan Zahoor** , Nasser A.M. Barakat , Mohammad S. Alsoufi , Tahani M. Bawazeer , Ahmed . Mohamed, Hak Yong Kim. “The (2 x 2) tunnels structured manganese dioxide nanorods with a phase for lithium air batteries”. **Superlattices and Microstructures** **90** (2016) 184-190. *I.F: 2.09.*
12. **Awan Zahoor**, Maria Christy, Yongbin Kim, Anupriya Arul, Yun Sung Lee, Kee Suk Nahm “Carbon/titanium oxide supported bimetallic platinum/iridium nanocomposites as bifunctional electrocatalysts for lithium-air batteries”. **J Solid State Electrochem** DOI 10.1007/s10008-016-3134-6. *I.F: 2.234*
13. Mi Young Oh, Jong Ju Lee, **Awan Zahoor**, G. Gnana kumar, and Kee Suk Nahm “Enhanced electrocatalytic activity of three-dimensionally-ordered macroporous La 0.6 Sr 0.4 CoO 3- $\delta$  perovskite oxide for Li–O<sub>2</sub> battery application” **RSC Adv.**, **2016**, **6**, **38**, 32212-32219 (DOI: 10.1039/C6RA02459A) *I.F: 3.708.*
14. Hosaeng Jang, **Awan Zahoor**, Yongbin Kim, Maria Christy, Mi Young Oh, Vanchiappan Aravindan, Yun Sung Lee., Kee Suk Nahm “Tailoring three dimensional  $\alpha$ -MnO<sub>2</sub>/RuO<sub>2</sub> hybrid nanostructure as prospective bifunctional catalyst for Li–O<sub>2</sub> batteries” **Electrochimica Acta** **212** (2016) 701–709. *I.F: 4.504*
15. Kaliyamoorthy Justice Babu, **Awan Zahoor**, Kee Suk Nahm, Md. Abdul Aziz, Periasamy Vengadeshe and Georgepeter Gnana Kumar “Manganese dioxide–vulcan carbon@silver nanocomposites for the application of highly sensitive and selective hydrazine sensors” **New Journal of Chemistry** DOI: 10.1039/c6nj00268d -2016. *I.F: 3.27.*
16. K. Ramachandran, **Awan Zahoor**, T. Raj Kumar, Kee Suk Nahmb,A. Balasubramani, G. Gnana Kumar “MnO<sub>2</sub> nanorods grown NGNF nanocomposites for the application of highly sensitive and selective electrochemical detection of hydrogen peroxide” **Journal of Industrial and Engineering Chemistry** **46** (2017) 19–27. *I.F: 4.17.*

17. Maria Christy, Anupriya Arul, Awan Zahoor, Kwang Uk Moon, Mi Young Oh, A. Manuel Stephan, Kee Suk Nahm “Role of solvents on the oxygen reduction and evolution of rechargeable Li-O<sub>2</sub> battery” **Journal of Power Sources** **342** (2017) **825-835. I.F: 6.33.**
18. **Zahoor Awan** , Zafar Khan Ghouri , Saud Hashmi, “Influence of Ag nanoparticles on state of the art MnO<sub>2</sub> nanorods performance as an electrocatalyst for lithium air batteries” **International Journal of Hydrogen Energy** **43** (2018) **2930 -2942. I.F: 4.23.**
19. Syed Kazmi, **Zahoor Awan** , Saud Hashmi “Simulation Study of Ionic Liquid Utilization for Desulfurization of Model Gasoline” Iranian Journal of Chemistry and Chemical Engineering. (In Press). **I.F: 1.01**
20. B.Kazmi, **A.Zahoor**, H.Saud, “Desulfurization of the dibenzothiophene (DBT) by using imidazolium-based ionic liquids (Ils) ”**Materials Physics and Chemistry** **1 (2)** (2018).
21. S.Hashmi, **A.Zahoor**, Z.K.Ghouri, “Thermo-Rheological Complexity of Novel Branch Polyethylene Synthesized by High Performance Bulky  $\alpha$ -Diimine Nickel (II) Catalysts” **Materials Focus** **7 (4)**, **573-581.**
22. Syed Mohammad Bilal Kazmi , **Dr Zahoor ul Hussain Awan** , Dr Saud Hashmi,” Viability of Shale Gas and CO<sub>2</sub> Removal using 1- Butyl-3-Methylimidazolium Tetrafluoroborate” **International Journal of Innovative Science and Research Technology** (2018) ISSN No:- 2456-2165, Volume 3, Issue 5, May – 2018.
23. Saud Hashmi, Saad Nadeem, **Zahoor Awan**, Adeel ur Rehman, Ahsan Abdul Ghani,”Synthesis, Applications and Swelling Properties of Poly (Sodium Acrylate-Coacrylamide) Based Superabsorbent Hydrogels” **Journal of the Chemical Society of Pakistan, Volume 41, No. 05, October 2019 issue.**
24. **Awan Zahoor**, Zafar Khan Ghouri,Saud Hashmi, Faizan Raza, Shagufta Ishtiaque,Saad Nadeem, Inayat Ullah, and Kee Suk Nahm, “Electrocatalysts for Lithium–Air Batteries: Current Status and Challenges” **ACS Sustainable Chem. Eng.** 2019, 7, 17, 14288-14320. **I.F:6.7**

### **PERSONAL DETAILS:**

Name	:	Zahoor Ul Hussain Awan
Father's Name	:	Hussain Bakhsh Awan
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Place of Birth	:	Karachi (Pakistan)
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