

## AZMAT ALI KHAN

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Matta District Swat, Pakistan
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### RESEARCH INTERESTS

Solar Energy Conversion, Nanomaterials, Wastewater Treatment, Carbon dioxide Conversion, Hydrogen Production.

### EDUCATION

**Ph. D Chemical Engineering** (September, 2017—January, 2022)

**Universiti Teknologi Malaysia (UTM)**

Research Topic: MXene Modified Layered Double Hydroxide Nanocomposite for Photocatalytic Carbon Dioxide Reduction To Renewable Fuels

**MS Petroleum Engineering** (October, 2010—March, 2013)

**Politecnico Di Torino, Italy**

Project: Mechanical Modeling of Hydraulic Fracturing

**BS Chemical Engineering**

**University of Engineering and Technology, Peshawar, Pakistan** (September, 2005—July, 2009)

Final Year Project: Design and Fabrication of Lab Scale Biogas Unit

### EXPERIENCE

**Assistant Professor** (February 2026 till now)

Department of Chemical and Energy Engineering, Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology, Khanpur Road, Mang Haripur, Khyber Pakhtunkhwa, Pakistan

**Postdoctoral Fellow** (June, 2024- January 2026)

Chemical and Petroleum Engineering Department (CPE), United Arab Emirates University, Alain, UAE

**Assistant Professor** (July, 2016—June 2024)

Department of Chemical Engineering, Faculty of Engineering and Arts (FOE&A), Balochistan University of Information Technology, Engineering and Management Sciences (BUIITEMS), Quetta, Pakistan

**Lecturer** (January, 2015— July, 2016)

Department of Chemical Engineering, Faculty of Engineering and Arts (FOE&A), Balochistan University of Information Technology, Engineering and Management Sciences (BUIITEMS) Quetta, Pakistan

### PUBLICATIONS:

1. **Azmat Ali Khan** and Muhammad Tahir, Recent advancements in engineering approach towards design of photo-reactors for selective photocatalytic CO<sub>2</sub> reduction to renewable fuels. **Journal of CO<sub>2</sub> Utilization**, 2019. **29**: p. 205-239. (I.F= 5.993)

2. Abdullah Bafaqeer, Muhammad Tahir, **Azmat Ali Khan**, Nor Aishah Saidina Amin, Indirect Z-Scheme Assembly of 2D ZnV<sub>2</sub>O<sub>6</sub>/RGO/g-C<sub>3</sub>N<sub>4</sub> Nanosheets with RGO/pCN as Solid-State Electron Mediators toward Visible-Light-Enhanced CO<sub>2</sub> Reduction. **Industrial & Engineering Chemistry Research**, 2019. **58**(20): p. 8612-8624. **(I.F=3.573)**
3. **Azmat Ali Khan** and Muhammad Tahir, Well-designed 2D/2D Ti<sub>3</sub>C<sub>2</sub>T<sub>A/R</sub> MXene coupled g-C<sub>3</sub>N<sub>4</sub> heterojunction with in-situ growth of anatase/rutile TiO<sub>2</sub> nucleates to boost photocatalytic dry-reforming of methane (DRM) for syngas production under visible light. **Applied Catalysis B: Environmental**, 2021. **285**: p. 119777. **(I.F=19.50)**
4. **Azmat Ali Khan**, Muhammad Tahir, and Abdullah Bafaqeer, Constructing a Stable 2D Layered Ti<sub>3</sub>C<sub>2</sub> MXene Cocatalyst-Assisted TiO<sub>2</sub>/g-C<sub>3</sub>N<sub>4</sub>/Ti<sub>3</sub>C<sub>2</sub> Heterojunction for Tailoring Photocatalytic Bireforming of Methane under Visible Light. **Energy & Fuels**, 2020. **34**(8): p. 9810-9828. **(I.F=3.65)**
5. Muhammad Tahir, **Azmat Ali Khan**, Sehar Tasleem, Rehan Mansoor, Wei Keen Fan., Titanium Carbide (Ti<sub>3</sub>C<sub>2</sub>) MXene as a Promising Co-catalyst for Photocatalytic CO<sub>2</sub> Conversion to Energy-Efficient Fuels: A Review. **Energy & Fuels**, 2021. **35**(13): p. 10374-10404. **(I.F= 3.65)**
6. **Azmat Ali Khan** and Muhammad Tahir, Synergistic Effect of Co/La in Oxygen Vacancy Rich Ternary CoAlLa Layered Double Hydroxide with Enhanced Reductive Sites for Selective Photoreduction of CO<sub>2</sub> to CH<sub>4</sub>. **Energy & Fuels**, 2021. **35**(10): p. 8922-8943. **(I.F=3.65)**
7. **Azmat Ali Khan**, Muhammad Tahir, and Zaki Yamani Zakaria, Synergistic effect of anatase/rutile TiO<sub>2</sub> with exfoliated Ti<sub>3</sub>C<sub>2</sub>T<sub>R</sub> MXene multilayers composite for enhanced CO<sub>2</sub> photoreduction via dry and bi-reforming of methane under UV-visible light. **Journal of Environmental Chemical Engineering**, 2021. **9**(3): p. 105244. **(I.F= 5.909)**
8. **Azmat Ali Khan** and Muhammad Tahir, Construction of an S-Scheme Heterojunction with Oxygen-Vacancy-Rich Trimetallic CoAlLa-LDH Anchored on Titania-Sandwiched Ti<sub>3</sub>C<sub>2</sub> Multilayers for Boosting Photocatalytic CO<sub>2</sub> Reduction under Visible Light. **Industrial & Engineering Chemistry Research**, 2021. **60**(45): p. 16201-16223. **(I.F=3.72)**
9. Muhammad Tahir, Areen Sherryrna, Rehan Mansoor, **Azmat Ali Khan**, Sehar Tasleem, Beenish Tahir, Titanium Carbide MXene Nanostructures as Catalysts and Cocatalysts for Photocatalytic Fuel Production: A Review. **ACS Applied Nano Materials**, 2022. **5**(1): p. 18-54. **(I.F=5.097)**
10. **Azmat Ali Khan** and Muhammad Tahir, Constructing S-Scheme Heterojunction of CoAlLa-LDH/g-C<sub>3</sub>N<sub>4</sub> through Monolayer Ti<sub>3</sub>C<sub>2</sub>-MXene to Promote Photocatalytic CO<sub>2</sub> Re-forming of Methane to Solar Fuels. **ACS Applied Energy Materials**, 2022. **5**(1): p. 784-806. **(I.F=6.024)**
11. **Azmat Ali Khan**, Muhammad Tahir, and Abdul Rahman Mohamed, Constructing S-scheme heterojunction of carbon nitride nanorods (g-CNR) assisted trimetallic CoAlLa LDH nanosheets with electron and holes moderation for boosting photocatalytic CO<sub>2</sub> reduction under solar energy. **Chemical Engineering Journal**, 2022. **433**: p. 133693. **(I.F=16.65)**
12. Muhammad Tahir, **Azmat Ali Khan**, Sehar Tasleem, Rehan Mansoor, Areen Sherryrna, Benish Tahir, Recent advances in titanium carbide MXene-based nanotextures with influential effect of synthesis parameters for solar CO<sub>2</sub> reduction and H<sub>2</sub> production: A critical review, **Journal of Energy Chemistry**, (2022). **(I.F=13.599)**
13. **Azmat Ali Khan**, Muhammad Tahir, Nazish Khan, Recent Developments in Titanium Carbide (Ti<sub>3</sub>C<sub>2</sub>)-Based Layered Double Hydroxide (LDH) Nanocomposites for Energy Storage and Conversion Applications: A Minireview and Perspectives, **Energy & Fuels**, 36 (2022) 9821-9843. **(I.F=4.65)**
14. Muhammad Tahir, Areen Sherryrna, **Azmat Ali Khan**, Muhammad Madi, Abdul Mohaimin Yahya Zerga, Beenish Tahir, Defect Engineering in Graphitic Carbon Nitride Nanotextures for

- Energy Efficient Solar Fuels Production: A Review, **Energy & Fuels**, 36 (2022) 8948-8977. (I.F=4.65)
15. **Azmat Ali Khan**, Muhammad Tahir, Nazish Khan, Process optimization and kinetic study for solar-driven photocatalytic methane bi-reforming over TiO<sub>2</sub>/Ti<sub>3</sub>C<sub>2</sub> supported CoAlLa-LDH-g-C<sub>3</sub>N<sub>4</sub> dual S-scheme nanocomposite, **Energy Conversion and Management**, 286 (2023) 117021. (I.F=11.53)
  16. **Azmat Ali Khan**, Muhammad Tahir, Nazish Khan, LDH-based nanomaterials for photocatalytic applications: A comprehensive review on the role of bi/trivalent cations, anions, morphology, defect engineering, memory effect, and heterojunction formation, **Journal of Energy Chemistry**, (2023). (I.F=13.599)
  17. Muhammad Tahir, **Azmat Ali Khan**, Abdullah Bafaqeer, Naveen Kumar, Muhammad Siraj, Amanullah Fatehmulla, Highly Stable Photocatalytic Dry and Bi-Reforming of Methane with the Role of a Hole Scavenger for Syngas Production over a Defective Co-Doped g-C<sub>3</sub>N<sub>4</sub> Nanotexture, **Catalysts**, 13 (2023) 1140. (I. F= 3.9).
  18. Mustafa Kamal, Juhana Jaafar\*, **Azmat Ali Khan\***, Zeeshan Khan, A. F. Ismail, M. H. D. Othman, Mukhlis A Rahman, F. Aziz, and Ghani Ur Rehman ., A Critical Review of the Advancement Approach and Strategy in SPEEK-Based Polymer Electrolyte Membrane for Hydrogen Fuel Cell Application. **Energy & Fuels**, 2024.(I.F=5.3)
  19. **Azmat Ali Khan**, Animesh Towfiq Partho, Monabbir Hasan Arnab, Mohd Amjad Khyam, Naveen Kumar, Muhammad Tahir\*, Recent advances in Lanthanum-based photocatalysts with engineering aspects for photocatalytic hydrogen production: A critical review. **Materials Science in Semiconductor Processing**, 2024. **184**: p. 108809. (I.F=4.6)
  20. Zeeshan Khan, Mustafa Kamal, Juhana Jaafar\*, Fahad Mir, Ghani Ur Rehman, **Azmat Ali Khan\***, A.F. Ismail, T. Matsuura, M.H.D. Othman, Mukhlis A. Rahman, Recent advances in photoreactor designs for the degradation of persistent organic contaminants with influential effects of configuration and parameters: A review. **Journal of Water Process Engineering**, 2025. **69**: p. 106825. (I.F= 6.7)
  21. Mustafa Kamal, Juhana Jaafar\*, **Azmat Ali Khan\***, Zeeshan Khan, A.F Ismail, Fahad Mir, M. H. D. Othman, Mukhlis A Rahman, F. Aziz, SULFONATED POLY (ETHER ETHER KETONE) (SPEEK) MEMBRANE BLEND WITH ZIRCONIUM PHOSPHATE BASED METAL ORGANIC FRAMEWORK (ZrP MOF) FOR FUEL CELL APPLICATION. **ASEAN Engineering Journal**, 2024. **14**(4): p. 87-91.
  22. Zeeshan Khan, Juhana Jaafar\*, **Azmat Ali Khan**, Mustafa Kamal, Ghani Ur Rehman, Fahad Mir, A.F. Ismail, M. H. D. Othman, Mukhlis A. Rahman, MXENE AS FUTURE POTENTIAL PHOTOACTIVE CO-CATALYST MATERIAL FOR EFFICIENT VISIBLE LIGHT PHOTODEGRADATION OF PERSISTENT ORGANIC CONTAMINANTS: A REVIEW. **ASEAN Engineering Journal**, 2024. **14**(4): p. 101-111.
  23. **Azmat Ali Khan**, Muhammad Tahir, Nazish Khan, Layered double hydroxide for photocatalytic application toward CO<sub>2</sub> reduction and water splitting: Recent advances, synthesis, heterojunction formation, challenges, and future directions, **Applied Physics Reviews**, 12 (2025). (I.F= 11.6)
  24. **Azmat Ali Khan**, Muhammad Tahir, Self-assembled 2D/2D Z-scheme heterojunction of NiAl-LDH/protonated g-C<sub>3</sub>N<sub>4</sub> on conductive 2D V<sub>2</sub>C MXene for high-performance solar-driven photocatalytic CO<sub>2</sub> to fuel conversion, **Fuel**, 400 (2025) 135692. (I.F=7.5)
  25. Fahad Mir, Juhana Jaafar, **Azmat Ali Khan**, Mustafa Kamal, Zeeshan Khan, Ahmad Fauzi Ismail, Mohd Hafiz Dzarfan Othman, Mukhlis A. Rahman, and F. Aziz. "Innovative MXene/TiO<sub>2</sub> Photocatalytic Membranes: A Comprehensive Approach to Efficient Visible

- Light Photodegradation and Sustainable Energy Generation.” **Defect and Diffusion Forum.** Trans Tech Publications, Ltd., March 14, 2025.
26. **Azmat Ali Khan**, Nazish Khan, Muhammad Tahir\*, Nature-Inspired Ag-Decorated CoAlLa-LDH/TiO<sub>2</sub> S-Scheme Photocatalysts for Efficient CO<sub>2</sub> Reduction to CO and CH<sub>4</sub>, **Energy Technology**, n/a e202500908. (I.F= 3.4)
  27. **Azmat Ali Khan**, Muhammad Tahir\*, Engineered dual-interface MXene-integrated CoAlLa-LDH/TiO<sub>2</sub> ternary heterojunctions for highly selective photoreduction of CO<sub>2</sub> into renewable fuels, **Journal of CO<sub>2</sub> Utilization**, 102 (2025) 103235. (I.F= 8.4)
  28. Mustafa Kamal, Zeeshan Khan, Mustapha Salisu Muhammad, Nuor Sariyan Suhaimin, Fahad Mir, Juhana Jaafar\*, **Azmat Ali Khan**, M. H. D. Othman, Mukhlis A. Rahman, M. H. Puteh, F. Aziz & W. N. W. Salleh , Constructing Zn (II)-based MOF1-assisted sulfonated polyether ether ketone electrolyte membrane for excellent proton conductivity and stability toward PEM fuel cell applications, *Journal of Materials Science*, (2025).(I.F= 3.9)
  29. **Azmat Ali Khan**, Muhammad Tahir\*, Multilayered Ti<sub>3</sub>C<sub>2</sub> MXene-supported NiCoAl-LDH/g-C<sub>3</sub>N<sub>4</sub> heterojunction with synergistic effect of Ni/Co/MXene for photocatalytic CO<sub>2</sub> reduction to CO/CH<sub>4</sub>, *Energy Conversion and Management: X*, (2025) 101485.(I.F= 7.6)
  30. Nawab Zada, **Azmat Ali Khan\***, M. Tahir\*, Intrinsic modulation of TiO<sub>2</sub> nanomaterials for enhanced photocatalytic degradation of pollutants: A review, *Micro and Nanostructures*, (2026) 208772.<https://doi.org/10.1016/j.micrna.2026.208772>

#### CONFERENCE/PROCEEDINGS

1. **Azmat Ali Khan**, Titanium dioxide (TiO<sub>2</sub>) and MXene based photocatalyst: a review on state-of-the-art synthesis, characteristics, and phenol photocatalytic degradation. (<http://imceet.bbsutsd.edu.pk/>)
2. Nawab Zada, **Azmat Ali Khan\***, Abbas khan, Waqar Ali, Photocatalytic degradation of pesticide from agriculture wastewater supported by Ti<sub>3</sub>AlC<sub>2</sub>-MAX/TiO<sub>2</sub> composite. (<http://imceet.bbsutsd.edu.pk/>)
3. **Azmat Ali Khan**, V<sub>2</sub>C modified ZIF-8 for photocatalytic CO<sub>2</sub> conversion to fuel, 1<sup>st</sup> international conference on climate action and sustainability (ICCAS-2025), United Arab Emirates University, UAE.

#### BOOK CHAPTERS:

1. **Azmat Ali Khan**, Muhammad Tahir, and Nazish Khan, Chapter 3: Titanium Carbide MXenes: Synthesis, Characterization, Book: Titanium Carbide MXenes: Synthesis, Characterization, Energy and Environmental Applications, Pages 33-56, Publisher: Wiley, ISBN: 978-3-527-35074-2
2. **Azmat Ali Khan**, Muhammad Tahir, Areen Sherryyna, Muhammad Madi, Abdelmoumin Y. Zerga, Nazish Khan, and Naveen Kumar, Chapter 4: Synthesis and Characterization of TiC MXene-Based Composites for Energy Storage and Conversion, Book: Titanium Carbide MXenes: Synthesis, Characterization, Energy and Environmental Applications, Pages 57-86, Publisher: Wiley, ISBN: 978-3-527-35074-2.
3. **Azmat Ali Khan**, Muhammad Tahir, and Nazish Khan, Chapter 8: Titanium Carbide (TiC) MXene-Based Layered Double Hydroxide (LDH) Composites for Energy and Environment Applications, Book: Titanium Carbide MXenes: Synthesis, Characterization, Energy and Environmental Applications, Pages 169-192, Publisher: Wiley, ISBN: 978-3-527-35074-2.

#### PATENT FILED/DISCLOSURE:

- 2020, Muhammad Tahir, Sehar Tasleem, Azmat Ali Khan, A new method of in-situ nucleating TiO<sub>2</sub> (anatase/rutile) to construct MXene nanotextures (Ti<sub>3</sub>C<sub>2</sub>-TiO<sub>2</sub> (A/R)/g-C<sub>3</sub>N<sub>4</sub>) and thereafter application in photocatalytic reforming of methane, Filing no IP/PT/01207.
- 2020, Muhammad Tahir, Azmat Ali Khan, Sehar Tasleem, Photocatalytic Fuel Production by

Complexes Incorporating Layered Polycrystalline Nano-Laminates Materials, Filling no IP/PT/01200.

#### **AWARDS:**

- Winner of Higher Education Commission (HEC) Pakistan, HEC-HRDI Scholarship for PhD
- Winner of SILVER MEDAL, 22nd Industrial Art & Technology Exhibition (INATEX), Universiti Teknologi Malaysia held on 1st to 2nd December 2020. Project title: Smart 2D Nanophotocatalysts for Carbon Dioxide Conversion to Green Methanol
- Winner of Gold Award in 21st Industrial Art Technology Exhibition (INATEX) 2019 for the invention/innovation of “Green 2D MXene Photocatalyst for CO<sub>2</sub> Conversion to Solar Methanol”
- Winner of Silver award in 21st Industrial Art Technology Exhibition (INATEX) 2019 for the invention/innovation of “Hybrid Solar System for Water Treatment and Hydrogen Production”
- Winner of Silver Medal, PECIPTA 2019, International Conference and Exhibition On Inventions By Institutions of Higher Learning (PECIPTA), University Tun Hussein Onn Malaysia, 22-23 September 2019. Title: Conversion of Carbon Dioxide to Sustainable Green Fuels Using Photoreactor Solar System

#### **JOURNALS REVIEWER:**

Carbon capture science & technology, Chemical engineering journal, Environmental research, Fuel processing technology, International journal of hydrogen energy, Journal of alloys and compounds, Optical materials, Separation and purification technology, Journal of environmental chemical engineering journal, ACS Industrial & Engineering Chemistry Research, Solid state sciences, Chemical engineering journal advances

#### **PROFFESIONAL ACTIVITIES:**

- Chairing a session during 1<sup>st</sup> international conference on climate action and sustainability (ICCAS-2025), United Arab Emirates University, UAE.

#### **PROJECTS:**

1. Photocatalytic Carbon Dioxide Conversion with Sour Gas to Chemicals and Fuels Using Multifunctional Composite in a Hybrid Photoreactor (working as postdoctoral fellow)
2. Photothermal Methane Bireforming for Hydrogen Production Over MOF derived LDH/Mixed-metal oxide Nanocomposite with single atom Ru/Ni metals (Accepted)

#### **SUPERVISIONS:**

Univeristi Teknologi Malaysia (UTM)

Sr. No	Name	Thesis Title	Role	Year	Level
1	Mustafa Kamal	Sulfonated Polyether Ether Ketone Membrane Containing Magnetized Metal Organic Framework Nanoparticles for Proton Exchange Membrane Fuel Cell Application	External Co-supervisor	Completed (July 2022-December 2025)	PhD
2	Zeeshan Khan	MXene And Piezo Co-Modified Layered Double Hydroxides For Photocatalytic Degradation Of Phenol	External Co-supervisor	Ongoing (July 2022-Now)	PhD
3	Fahad Mir	Mxene-TiO <sub>2</sub> Transparent Polyvinylidene Fluoride Photocatalytic Hollow Fiber Membrane for Enhanced Phenol Degradation	External Co-supervisor	Completed June 2024	M. Phil

#### **TEACHING ACTIVITIES**

**Postgraduate courses:**

Sr. No	Semester	Course	Credit	Level	Section	No of Students
1	Spring 2023	ENGG 613-P23 (3205) Environmental Engineering	3	PhD	1	5
2	Spring 2022	CHEE 651-LEC (3128) Sustainable Energy Engineering	3	Master	1	2

**Undergrade Courses:**

Sr. No	Semester	Course	Credit	Section	No of Students
1	Spring 2026	Introduction to Environmental studies	3	1	8
2	Fall 2023	CHEE 410-LEC (1603) Transport Phenomena (lecture)	3	1	10
3	Spring 2023	CHEE 402-LEC (1959) Chemical Engineering Thermodynamics II (lecture)	3	1	10
4	Spring 2023	CHEE 410-LEC (1985) Transport Phenomena (lecture)	3	1	2
5	Spring 2023	CHEE 429L-F (2499) Project II (Laboratory)	4	1	3
6	Spring 2023	ENGG 30-LEC (1976) Maintenance Engineering and Risk Management (lecture)	2	1	25
7	Fall 2022	CHEE 410-LEC (1619) Transport Phenomena (lecture)	3	1	25
8	Fall 2022	CHEE 428L-F (1627) Project I (Laboratory)	1	1	3
9	Spring 2022	CHEE 407-LEC (2165) Simultaneous Heat & Mass Transfer(lecture)	2	1	20
10	Spring 2022	CHEE 407-LEC (2380) Simultaneous Heat & Mass Transfer (lecture)	2	1	6
11	Spring 2022	ENGG 421-LEC (1817) Environmental Engineering (lecture)	3	1	19
12	Winter 2021	ENGG 315-LEC (1541) Applied Thermodynamics (lecture)	2	1	10
13	Fall 2021	CHEE 410-LEC (1424) Transport Phenomena	3	1	17
14	Spring 2017	CHEE 402-LEC (1366) Chemical Engineering Thermodynamics II (lecture)	3	1	39
15	Fall 2016	CHEE 202-LEC (2712) Chemical Process Principles I (lecture)	3	1	1
16	Fall 2016	CHEE 205-LEC (1175) Chemical Process Calculations I (lecture)	3	1	62
17	Spring 2016	CHEE 404-LEC (1490) Chemical Reaction Engineering (lecture)	3	1	44
18	Spring 2016	CHEE 404L-LAB (1491) Chemical Reaction Engineering (laboratory)	1	1	40
19	Spring 2016	CHEE 425L-D (1480) Plant Design Project (laboratory)	1	1	5
20	Spring 2016	CHEE 421L-LAB (1474) Environmental Engineering (laboratory)	1	1	51

21	Fall 2015	CHEE 302-LEC (2248) Chemical Process Technology I (lecture)	3		2
22	Fall 2015	CHEE 402-LEC (1190) Chemical Engineering Thermodynamics II (lecture)	3	1	42
23	Fall 2015	CHEE 425L-E (1066) Plant Design Project (laboratory)	4	1	4
24	Fall 2015	CS 311-LEC (2254) Computer Programming and Application Software (lecture)	3	1	2
25	Fall 2015	CSS 311L-LAB (2255) Computer Programming and Application Software (laboratory)	1	1	1
26	Spring 2015	CHEE 407-LEC (1171) Simultaneous Heat & Mass Transfer (lecture)	3	1	50
27	Fall 2015	ENGG 401-LEC (1101) Engineering Economics (lecture)	2	1	46
28	Spring 2015	CHEE 407-LAB (1172) Simultaneous Heat & Mass Transfer (laboratory)	1	1	50
29	Spring 2015	CHEE 425L-F (1191) Plant Design Project (laboratory)	1	1	5
30	Spring 2015	ENGG 421-LEC (1181) Environmental Engineering (lecture)	2	1	46
31	Spring 2015	ENGG 421L-LAB (1182) Environmental Engineering (laboratory)	1	1	46

#### **SEMINARS/WORKSHOPS:**

3. **Professional Development Training Program** (January 15, 2015 - February 10, 2015)  
2-days workshop on SPSS and STATA (19- 20 November 2015)
4. **High Impact Publication in Sustainability Research** organized by ICLCA'18 Pre Conference Workshop by Elsevier (23<sup>rd</sup> October 2018) at Johor Malaysia.
5. **Over Coming Writer Block And Strategy On Becoming Productive Writer** organized by Postgraduate Student Society School of Chemical and Energy Engineering Faculty of Engineering Universiti Teknologi Malaysia (UTM) (22<sup>nd</sup> April 2019)
6. **Graduate on Time (G.O.T) Motivation Course** organized by Postgraduate Student Society School of Chemical and Energy Engineering Faculty of Engineering Universiti Teknologi Malaysia (UTM) (9<sup>th</sup> June 2020)
7. **How to Get High Impact Publication** organized by Postgraduate Student Society School of Chemical and Energy Engineering Faculty of Engineering Universiti Teknologi Malaysia (UTM) (19<sup>th</sup> May 2020)

#### **REFERENCES:**

1. **Dr. Muhammad Tahir**, Assistant Professor, Department of Chemical and Petroleum Engineering, United Arab Emirate University (UAEU) (E-mail: [muhhammad.tahir@uaeu.ac.ae](mailto:muhhammad.tahir@uaeu.ac.ae); [btahir@yahoo.com](mailto:btahir@yahoo.com))
2. **Dr. Hayat Khan**, Associate Professor, Department of Chemical Engineering, University of Engineering and Technology (UET) Peshawar, Pakistan (Email: [hayat@uetpeshawar.edu.pk](mailto:hayat@uetpeshawar.edu.pk))

3. **Ir. Ts. Dr. Zaki Yamani Zakaria**, Associate Professor, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, 81310 UTM Skudai, Malaysia (Email: [zakiyamani@cheme.utm.my](mailto:zakiyamani@cheme.utm.my))