Curriculum Vitae

PERSONAL DATA:

Name:	Iqra Zubair Awan
Current Position:	Assistant Professor (IPFP) Department of Polymer Engineering and Technology, University of the Punjab, Lahore.
Date and Place of Birth:	31-03-1991, Sargodha, Pakistan
Correspondence address:	Department of Polymer Engineering and Technology, University of the Punjab, Lahore
Nationality:	Pakistani
Email:	iqrazubair@gmail.com, iqra.ceet@pu.edu.pk

PROFESSIONAL EXPERIENCE:

Assistant Professor (IPFP) **09 April 2019 to date**

Department of Polymer Engineering and Technology, University of the Punjab, Lahore

Thesis and Dissertation Work:

Co-supervisor of 1 MPhil student working on the synthesis of Layered Double hydroxide (LDHs) as catalyst precursors for the application of water purification.

Administrative Responsibilities:

Develop and implement comprehensive lab safety programs, ensure the regulation of security rules.

EDUCATION:

2015-2019	Doctor of Philosophy in Chemistry (Industrial) (Summa cum laude)	University of Bologna, Bologna, Italy
2013-2015	Master of Science in Chemistry (Inorganic)	Lahore College for Women University, Lahore Pakistan
2009-2013	Bachelor of Science (Hons.) in Chemistry (General)	Forman Christian College University, Lahore, Pakistan

ADDITIONAL COURSEWORK:

Crystallography in MaMaSELF-M2, University of Montpellier, France (2016)

Material for catalysis in MaMaSELF-M2, University of Montpellier, France (2016)

French language course (A1.1), CIHEAM-IAMM, Montpellier, France (2017)

RSEARCH EXPERIENCE:

PhD Research Fellow **1st Oct 2015 - 30thJan 2019**

University of Bologna, Bologna (Italy) and ENSCM, Montpellier, (France)

- Synthesis and characterization of β-O-4 and β-β lignin model molecules.
- Synthesis of novel Layered Double Hydroxide (LDH) catalyst precursors for mixed oxides as heterogeneous catalysts for green chemistry.
- Reductive depolymerisation of lignin model molecules under mild conditions to obtain functional aromatic compounds.

Research Intern **5th Feb - 20thAug 2015**

Lahore College for Women University, Lahore, Pakistan

- Adsorption of novel cationic surfactant N-dibutyl-dodecanoyl-N,N diethyl (thioxo) methanediaminimum bromide on the silica surface and its application for the removal of anionic pollutants from industrial wastewater as a function of physical parameters.

Intern **7th Jul - 20thAug 2014**

Applied Chemistry Research Centre (ACRC), Pakistan Council of Scientific and Industrial Research (PCSIR) Lahore, Pakistan

- Chemical and biological water quality testing for heavy metals, hardness, BOD, COD, TDS and fecal coliform.
- Analysis of pharmaceutical samples and food products using HPLC.
- Basic training for instrumental techniques like FTIR, LCMS and ICP.

Intern **10th Jul - 10thAug 2012**

CHT Pakistan (Private) LIMITED, Lahore (Pakistan)

- Worked in application lab to test the textile chemical additive efficiency on fabric.
- Worked in a QC lab for testing conductivity, formaldehyde content, and solidification point of a batch before release.
- Training and practice of analytical instruments such as Karl Fischer Titrator, Padding mangle infrared moisture analyzer.

AWARDS AND GRANTS:

1 Wavier on registration fee for 4th Tailor-Made Fuel Conference in Aachen Germany (2016)

2 Full grant for attending 16th International Clay Conference in Granada, Spain (2017)

3 Full grant for attending EUROPACAT in Florence, Italy (2017)

SCIENTIFIC EXPERTISE:

Spectral techniques	NMR (^{1}H, ^{13}C), FT-IR, UV-Vis, AAS, Mössbauer Spectroscopy, MALDI-TOF spectrometry
Characterization techniques for materials	XRD, EDX, N_2 physiosorption, TG, SEM, TPR
Chromatography Techniques	TLC, Column Chromatography, GC (FID, MS) HPLC, LCMS, GPC
Purification techniques	Adsorption, Distillation, Recrystallization, Partitioning
Instruments	Digital titrators for catalyst preparation and 6-posts multi-reactor autoclave system for high pressure reactions

SERVICES:

1 Reviewer of Advanced Materials and Technologies for Environmental Applications, January, 2019.

2 Reviewer of the Science Journal of Analytical Chemistry, November, 2018.

3 Article reviewer, Journal of the Chemical Society of Pakistan, reviewed article on Properties of γ″ phase precipitate in Mg-Gd-Zn alloy, October, 2018.

4 In the Organizing body of Europacat-2017 held in Florence, Italy. (27^{th}-31^{st}) August, 2017

5 MSc Thesis Reviewer: Combustion Characteristics Study of Pakistani Coals using TGA Technique by Muhammad Saad Ullah and Ayesha Kanwal (session 2017-2019) in the Centre of Coal Technology, University of the Punjab.

PRSENTATIONS AND OTHER PROFESSIONAL CONTRIBUTIONS:

Oral Communications

- Perks of Heterogeneous catalysis for the reductive depolymerization of lignin to improve existing valorization techniques, Recent Innovations in Molecular Sciences, Lahore, Pakistan (6-8^{th} Nov, 2019).
- The riddle of Cu-layered double hydroxides solved by general principles of hydrotalcite synthesis, Euroclay 2019, Paris, France (1-5^{th} July, 2019).
- Which role for hydrogen transfer in organosolv pulping?, The International Symposium on Green Chemistry, La Rochelle, France (13-17^{th} May, 2019)
- From layered double hydroxides to catalysts of depolymerisation of lignin, SINCHEM Seminar, Aachen, Germany (16-17^{th} December, 2018).

- Evaluation of the reduction of hydrogen burden in bio-oil production by hydrogen-transfer pre-treatment of lignin, 7th International Symposium on Energy from Biomass and Waste, Venice, Italy (15-18th October, 2018)
- Study of mild reaction conditions for the depolymerisation of Kraft lignin catalyzed by Cu-bearing Lamellar Double Hydroxide precursors of heterogeneous catalysts. 7th EuCheMS Chemistry Congress, Liverpool, UK (26-30th August, 2018)
- Relevance of Fe or Al-bearing amorphous oxides in catalysts from thermal decomposition of Cu-Ni-Fe Lamellar Double Hydroxides, National Congress of the Chemical Society of France-SCF, Montpellier, France (2-4th July, 2018)
- Study of the field of Synthesis of Cu-Ni-Fe Lamellar Double Hydroxides and their transformation into mixed oxides for catalytic applications, 55th Annual Meeting of Clay Mineral Society, Champaign-Urbana, Illinois, USA (11-14th June, 2018)
- Copper-bearing layered double hydroxides as precursors of heterogeneous catalyst for the oxidative depolymerisation of lignin models under mild reaction conditions, 3rd Green and Sustainable Chemistry Conference, Berlin, Germany (13-16th May, 2018)
- Synthesis and limitations of Cu-Fe based novel Layered Double Hydroxides (LDH) precursors of catalysts and their application for depolymerisation of lignin and its model molecules, Catalyst Design: From Molecular to Industrial Level, Moscow, Russia (19-23rd May, 2018)
- Practical tips for a better characterization of materials through XRD, SINCHEM Winter school, Bologna, Italy (15-16th Feb, 2018)
- Heterogeneous catalysts for the valorisation of renewable feedstocks by depolymerisation of lignins, SINCHEM Autumn school Turin, Italy (22-24th Nov, 2017)
- Synthesis of Layered Double Hydroxides(LDH) catalyst precursors for the depolymerisation of lignin model molecules, 5th Young Mediterranean Researcher Days, Montpellier, France (12-13th Oct, 2017)
- Catalytic valorisation of lignin model molecules with hydrotalcite-like catalyst. Third SINCHEM Autumn school, Lyon, France (30th Nov - 02nd Dec, 2016)
- Effective ways for the depolymerisation of lignin to produce functional aromatic compounds, Third SINCHEM Winter school, Bologna, Italy (15-17th Feb, 2016)

Poster Communications:

- Can hydrogen transfer improve the valorisation of lignin from organosolv pulping?, Europacat-2019, Aachen, Germany (18-23rd August, 2019).
- Presence of amorphous material in the Cu-Fe LDH upon calcination, GNM school on Physical properties of minerals: how and why to dive into their knowledge, Bressanone, Italy. (12-15th February, 2018)
- Novel Layered Double Hydroxide (LDH) precursors of catalysts for the depolymerization of lignin model molecules. Europacat-2017, Florence, Italy (27-31st August, 2017)

- Novel layered double hydroxide (LDH) for the oxidative valorization of lignin. What limits for Jahn Teller Distortion in precipitation of Cu-Fe LDH?, 16th International Clay Conference, Granada, Spain (17-21st July, 2017)
- Synthesis and oxidative depolymerisation of lignin model molecules by dispersed metal oxides obtained from novel layered double hydroxide (LDH), The International Symposium on Green Chemistry, La Rochelle, France (16-19th May, 2017)
- Copper-bearing layered double hydroxides as precursors of heterogeneous catalyst for the oxidative depolymerisation of lignin models under mild reaction conditions, Green Chemistry Conference, Aachen, Germany (02-04th Feb, 2017)
- Synthesis of lignin model molecules to study the effect of catalyst on biomass depolymerisation, 4th Tailor Made Fuels from Biomass, Aachen, Germany (21-23rd June, 2016)
- Catalytic valorisation of lignocellulosic biomass, 2nd EFCATS-CNRS European Summer School on Catalyst Preparation, Vogüe, France (12-17th June, 2016)

Attended:

- One day workshop on "Does your publication facilitate to improve professional experience or just a contribution?" , University of the Punjab, Lahore, Pakistan (22nd August, 2019)
- One day workshop on "Energy Efficiency and Conservation", University of the Punjab, Lahore, Pakistan (17th April, 2019)
- PHOTOTRAIN Winter School, UNIBO, Bologna, Italy (12-14th Feb, 2018)
- ELITECAT School of Catalysis, CPE Lyon, France (03-06th July, 2017)
- French Conference on Catalysis (FC Cat 1), Frejus, France (23-27th May, 2016)
- Third International Conference, Catalysis for Renewable Sources: Fuel, Energy, Chemicals, Catania, Sicily, Italy (06-11th Sept, 2015)

PUBLICATIONS:

1 Book Chapter: Heterogeneous catalysis as a tool for production of functional aromatic compounds from lignin, I.Z. Awan, N. Tanchoux, F. Quignard, S. Albonetti, F. Cavani, F. Di Renzo, in S. Albonetti, S. Perathoner, E. A. Quadrelli (Eds.) Horizons in Sustainable Industrial Chemistry and Catalysis, 178, Edition 1, Elsevier ISBN: 9780444641274, Chapter 13.

2 Awan, I.Z., A.Q. Khan, Recovery, Recrystallization, and grain-Growth. Journal of the Chemical Society of Pakistan. 41, 1 (2019) 1-42.

3 Awan, I.Z., A.Q. Khan, Corrosion-Occurrence and Prevention. Journal of the Chemical Society of Pakistan. 40, 4 (2018) 602-655.

4 Awan, I.Z., A.Q. Khan, Shape Memory Alloys. Journal of the Chemical Society of Pakistan. 40, 1 (2018) 1-23.

5 Awan, I.Z., A.Q. Khan, Precipitation from Solid Solutions. Journal of the Chemical Society of Pakistan. 39, 3 (2017) 319-336.

6 Awan, I.Z., S.B. Hussain., A. Haq., A.Q. Khan, Wondrous Nanotechnology. Journal of the Chemical Society of Pakistan. 38, 6 (2016) 1026-1055.

7 Rehman, Z., S. Ibrahim., A. Khan., M. Imran., M.M. Naseer., I. Khan., A. Shah., M.N. Tahir., M. Rahman., M.,I. Z. Awan, Homobimetallic zinc(II) dithiocarbamates: synthesis, characterization and in vivo antihyperglycemic activity. Journal of Coordination Chemistry. 69, 3 (2016) 551-561.

8 Ahmed, F., K. Shah., I.Z. Awan., M.R. Shah, Triazole-based highly selective supramolecular sensor for the detection of diclofenac in real samples. Ecotoxicology and Environmental Safety, 129 (2016) 103-108.

9 Awan, I.Z., A.Q. Khan, Uranium-The Element: Its Occurrence and Uses. Journal of the Chemical Society of Pakistan. 37, 6 (2015) 1056-1080.

10 Khan, S. Z., M.K. Amir., M.M. Naseer., R. Abbasi., K. Mazhar., M.N. Tahir., I.Z. Awan., Z. Rehman., Heteroleptic Pd(II) dithiocarbamates: synthesis, characterization, packing and in vitro anticancer activity against HeLa cell line. Journal of Coordination Chemistry, 68, 14 (2015) 2539-2551.

INVITED SPEAKER

Heterogeneous catalysts for the valorisation of renewable feedstocks by depolymerisation of lignins, 2nd International Conference on Recent Advances in Chemical Sciences, Government College University, Lahore, Pakistan (20-22nd March 2019).

SKILLS:

Digital Competence	MS Office, ChemBioDraw, Advanced Chemistry Development (ACD/Labs), EndNote 7, IGOR Pro, Origin, MestReNova, ImageJ, Diamond
Language skills	Urdu (mother tongue), English (fluent), French (A1), Italian (basic)
Soft Skills	Adaptability, Written and verbal communication, Planning, Team work, Time management, Ability to multitask and stress management.

REFERENCES:

Prof. Dr. Fabrizio Cavani (PhD Supervisor)
Chairman, Department of Industrial Chemistry, University of Bologna
Viale Risorgimento 4, 40136 Bologna, Italy
Tel: 0039-0512093680
Email: fabrizio.cavani@unibo.it

Prof. Dr. Francesco Di Renzo (PhD Co-Supervisor)
Director of Research, Advanced Materials for Catalysis and Health Institute Charles Gerhardt Montpellier, Ecole Nationale Superieure de Chimie de Montpellier
8 Rue Ecole Normale F-34296 Montpellier
Tel: 0033-607508148
Email: francesco.di-renzo@enscm.fr

Prof. Dr. Stefania Albonetti (Coordinator SINCHEM Program)
Professor, Department of Industrial Chemistry, University of Bologna
Viale Risorgimento, 4 - 40136 Bologna
Tel: 0039-051 2093681
E-mail: stefania.albonetti@unibo.it