# Curriculum Vitae

## Atif Javaid, Ph.D.



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| **Contact Details:** | **Institution**:<br>Department of Polymer and Process Engineering<br>*University of Engineering and Technology,*<br>Lahore, 54890, Pakistan<br><br>CNIC # 31202-9521576-7<br>Passport # AF8695763<br>PEC Registration # CHEM/5690<br><br>Phone: +92 (300) 855 7587<br>WhatsApp: +1 (734) 730 1710<br>E-mail: atifjavaid@uet.edu.pk |
| **Education and Academic Qualifications** | Jan 2022 – Apr 2023: **Visiting Fellow/Research Scholar**, University of Michigan, Ann Arbor, United States, Department of Chemical Engineering, Working Group of Prof Dr Nicholas A Kotov.<br><br>Oct 2007 – Feb 2012: **Ph.D.,** Imperial College London, United Kingdom, Dept. of Chemical Engineering & Chemical Technology, Working Groups of Prof. Alexander Bismarck, Prof Dr. Milo Shaffer, Prof Dr. Emile Greenhalgh, Dr. Joachim Steinke, and Prof Dr Anthony Kucurnak<br><br>Jan 2002 – Dec 2005: **BSc** Chemical (Polymer) Engineering, University of Engineering & Technology, Lahore, Pakistan<br><br>1999 – 2001**: FSc** Pre Engineering, S. E. College, Bahawalpur, Pakistan<br><br>1997 – 1999: **Matric**, Science Group, Al- Farooq School System, Bahawalpur, Pakistan |
| **Professional Experience** | 04.2025 – Current: **Professor** in the Department of Polymer & Process Engineering, University of Engineering & Technology, Lahore, Pakistan.<br><br>03.2019 – 04.2025: **Associate Professor** in the Department of Polymer & Process Engineering, University of Engineering & Technology, Lahore, Pakistan.<br><br>06.2012 – 3.2019: **Assistant Professor** in the Department of Polymer & Process Engineering, University of Engineering & Technology, Lahore, Pakistan<br><br>10.2010 – 10.2011: Research Student Supervision, MSc Project title: *Multifunctional Composites for Structural Power Storage Devices*. Student Name: Juan Tu, Department of Chemical Engineering & Chemical Technology, Imperial College London, United Kingdom<br><br>09.2009 – 02.2012: **Scientific Assistant** to the Professor and **Teaching Assistant** at the **Department of Chemical Engineering & Chemical Technology**, Imperial College London, United Kingdom.<br><br>03.2006 – 09.2007: **Lecturer** in the Dept. of Polymer & Process Engineering, University of Engineering & Technology, Lahore |
| **Research Interests** | Novel polymer electrolytes, ceramic reinforced polymer composite electrolytes, conducting polymers, nano- and hierarchical composites, thermoplastic composites, multifunctional polymer composites for electrical energy storage applications, Fire retardant polymer composites |
| **Presentations and Publications** | Publications: 1 book chapter, 21 refereed International journal papers, 2 refereed papers in proceedings of international conferences, and 2 refereed national journal paper. For details, please see the attached publication list.<br><br>Oral presentations: 8 Invited presentations at various international conferences. And 2 poster presentations. As well as other contributed presentations. For details, please see the attached presentation list. |
| **Project Funding** | 2015-2019, Multifunctional structural polymer nanocomposites for electrical energy storage applications, Higher Education Commission, Pakistan (PKR 6.5 Million)- ***Completed***<br><br>2013-2016, Fabrication of hybrid multifunctional carbon fiber reinforced polymer composites for electrical energy storage applications, ASRB, UET Lahore, Pakistan (PKR 1.5 Million)- ***Completed***<br><br>2022-2023, Fabrication of hybrid multifunctional carbon fiber reinforced polymer composites for structural zinc-ion battery applications, HEC Postdoctoral Fellowship, University of Michigan, Ann |

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| | Arbor, USA (USD 65,800)- ***Completed*** |
| **Honorary Awards** | 2010, MAST, Ministry of Defence, United Kingdom (For tuition fee support) (£6000) - ***Completed***<br>2009, Challenging Engineering Project, PaCE, Imperial College London, United Kingdom (£10,000)<br>2009, 1st Prize winner, Poster Presentation, YRM International Conference, Nottingham, United Kingdom (£1000)<br>2005, 2nd Position holder, BSc Chemical (Polymer) Engineering, UET, Lahore, Pakistan |
| **Current Teaching Duties** | Supervised Undergraduate, MSc, and Ph.D. Research Projects. Supervised more than **20 M.Sc.** Polymer and Process Engineering students and **1 Ph.D. student.**<br>2nd year Heat Transfer, 2nd year Reaction Engineering, 3rd Year Mechanical Properties of Polymers, 3rd Year Mass Transfer, 4th Year Smart materials; 4th Year Polymer Composites, 4th year Process Plant Design, MSc Advanced Polymer Composites, MSc Optimisation, and Process Design, PhD Multifunctional Polymer Composites. |
| **Past Teaching Duties** | 1st Year Industrial Stoichiometry, Computer & Computations; 2nd Year Thermodynamics; 2nd Year Heat Transfer, 3rd Year Polymer Reaction Engineering; 4th Year Advanced Machine Design, 4th Year Process Plant Design. |
| **Research Thesis Supervision** | **Department of Polymer and Process Engineering, UET, Lahore**<br>2014: MSc research project title: Characterization of Anti-proliferative Biolimus A9 eluting PLGA stent coating: bioresorbable implants to reduce the risk of restenosis. Student Name: Hirra Anjum.<br>2015: MSc research project title: *Cotton and Alginate fibers reinforced Starch/Polyvinyl alcohol composites films*. Student Name: Wasif Razzaq<br>2016: MSc research project title: *Fabrication of a fire-retardant Phosphoric acid modified Bis-phenol-A & Additives filled composite*. Student Name: Muhammad Asim Iqbal (2012-MS-PE-11).<br>2016: MSc research project title: *Carbon Fiber Reinforced Modified Bisphenol-A Epoxy Composites for Fire Retardant Applications*. Student Name: Ayesha Afzal (2013-MS-PE-08).<br>2016: MSc research project title: *Fabrication and Characterization of Multifunctional Structural Composite Batteries for Electrical Energy Storage*. Student Name: Muhammad Zeshan Ali (2011-MS-PE-02).<br>2018: MSc research project title: *Fabrication and characterization of carbon aerogel modified carbon fiber reinforced structural supercapacitors*. Student Name: Rana Muhammad Irfan (2016-MS-PE-5).<br>2019: MSc research project title: *Investigation of electrochemical and mechanical properties of graphene nanoplatelets and carbon fiber reinforced polymer nanocomposites for structural and electrical energy storage applications*. Student Name: Ahmad Shahzaib (2013-MS-PE-14).<br>2021: MSc research project title: *Fabrication and Characterization of Multifunctional Structural Lithium-Ion Batteries based on Carbon Aerogels/Metal Oxide Modified Carbon Fiber Reinforced-Epoxy Composites*. Student Name: Sehrish Noreen (2017F-MS-PE-2).<br>2023: MSc research project title: *Fabrication and characterization of fire-retardant carbon fiber based multifunctional supercapacitor*. Student Name: Komal Naveed (2018-MS-PE-15).<br>2026: MSc research project title: *Synergistic integration of photovoltaic and electrochemical energy storage: developing polymer-based electrolytes for quasi-solid-state structure photo-supercapacitors*. Student Name: Muzammil Younas (2023-MS-PE-2). (Co-supervision)<br>2026: MSc research project title: *Mechanically robust carbon fiber reinforcement polymer composites for polymer zinc-ion structural battery applications*. Student Name: Andhleeb Arshad (2023-MS-PE-1).<br>**Department of Dental Materials, De Montmorency College of Dentistry Technology, Lahore**<br>2021: MPhil research project title: *Characterization of denture base acrylic resin reinforced lignocellulose-based bio-fillers*. Student Name: Dr Hammad Hassan.<br>**Department of Polymer Engineering and Technology, University of Punjab, Lahore**<br>2014: MPhil research project title: *A study of The Effect of Nano-Size fillers on the properties of Hybrid Fiber Reinforced Vinyl Ester composites*. Student Name: Muhammad Adrees.<br>**Department of Physics, UET, Lahore**<br>2019: PhD research project title: *Fabrication of Nanostructured Hybrid Electrodes for Electrochemical Energy Storage Devices*. Student Name: Khadija Tul Kubra (2014-Ph. D-Phy-01). (Co-supervision)<br>**Department of Chemical Engineering, UET, Lahore**<br>2021: MSc research project title: *Fabrication and Characterization of Multifunctional Polymer* |

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| | *Composites for Fire Retardant Applications*. Student Name: Shah Bano Hashmi (2018-MS-CH-7).<br><br>2024: MSc research project title: *Study of Long-Term Creep Behavior of Multifunctional Structural Polymer Composites*. Student Name: Ammara Shaukat (2017F-MS-CH-23). (Co-supervision)<br><br>**Department of Aeronautical Engineering, Imperial College London, United Kingdom**<br>02.2010 – 05.2011: Research Student Supervision, Undergraduate project title: *Design and Development of Demonstrator for Structural Power Materials*. Student Name: Oliver Berthoud,<br><br>**Department of Chemical Engineering & Chemical Technology, Imperial College London, United Kingdom**<br>04.2009 – 05.2010: Research Student Supervision, Undergraduate project title: *Structural Supercapacitors: Optimisation of Electrical and Mechanical Properties*. Student Names: Angus Bayley & Sarah Button, |
| **Administrative Duties** | Program Evaluator PEV, Pakistan Engineering Council, Islamabad.<br><br>In-charge Outcome-based Education Implementation Team (March 2014 – present) and Departmental Self-assessment report preparation following ABET Accreditation. Member Departmental OBE Committee (DOBEC)<br><br>Departmental Director Research (April 2012 – present)<br>Secraty Postgraduate Research Committee, (Sept 2023 – Present)<br><br>Library In-charge (April 2012 – present)<br>Member of the Imperial Volunteers, United Kingdom (2008 - 2011)<br><br>International Student Ambassador, Imperial College London, United Kingdom (2008 – 2010) |

## International Refereed Book Chapter

[1] Atif Javaid, *Chapter 11: Activated carbon fiber for energy storage* in Activated Carbon Fiber and Textiles, First edition, Woodhead Publishing Limited, **2016**.

## Impact factor Refereed Journal Publications

[1] K. K. C. Ho, S. Shamsuddin, S. Riaz, S. Lamorinere, M. Q. Tran, A. Javaid, A. Bismarck, *Wet impregnation as a route to unidirectional carbon fiber reinforced thermoplastic composites manufacturing*, in Plastics, Rubber and Composites, **2011**, 100. *10.1179/174328911X12988622801098.*

[2] A. Javaid, K. K. C. Ho, A. Bismarck, M.S.P. Shaffer, J.H.G. Steinke and E.S. Greenhalgh, *Multifunctional structural supercapacitors for electrical energy storage applications*, in Journal of Composite Materials, **2014,** 48 (12), 1409-1416. *10.1177/0021998313487239.*

[3] M.A. Shehzad, A.A. Qaiser, A. Javaid and F. Saeed, *In situ solution-phase polymerization and chemical vapor deposition of polyaniline on microporous cellulose ester membranes: AFM and electrical conductivity studies, in* Synthetic Metals, **2015,** 200 (0), 164-171. *10.1016/j.synthmet.2014.12.011*.

[4] A. Javaid, K. K. C. Ho, A. Bismarck, J.H.G. Steinke, M.S.P. Shaffer, and E.S. Greenhalgh, *Carbon fiber-reinforced poly(ethylene glycol) diglycidylether based multifunctional structural supercapacitor composites for electrical energy storage applications*, in Journal of Composite Materials, **2016,** 50(16), 2155–2163. *10.1177/0021998315602324.*

[5] Muhammad Zeshan Ali and Atif Javaid, *Mechanical and Rheological Characterization of Efficient and Economical Structural Wood-Plastic Composite of Wood and PVC*, in Journal of the Chemical Society of Pakistan, **2017** 39 (2), 183-189.

[6] Atif Javaid and Muhammad Zeshan Ali, Multifunctional Structural Lithium Ion Batteries for Electrical Energy Storage Applications, in Material Research Express, **2018,** 5, 055701. *10.1088/2053-1591/aabeb1*

[7] A. Javaid, K. K. C. Ho, A. Bismarck, J.H.G. Steinke, M.S.P. Shaffer, and E.S. Greenhalgh, Improving the multifunctional behavior of structural supercapacitors by incorporating chemically activated carbon fibers and mesoporous silica particles as reinforcement, in Journal of Composite Materials, **2018,** 52(22), 3085–3097**.** *10.1177/0021998318761216.*

[8] Atif Javaid and Ayesha Afzal, Carbon fiber reinforced modified bisphenol-a diglycidylether epoxy composites for flame retardant applications, in Material Research Express, **2018,** 5, 065703. *10.1088/2053-1591/aaca71.*

[9] Atif Javaid, Muhammad B Zafrullah, Fareed ul Haq Khan and Ghulam M Bhatti, Improving the multifunctionality of structural supercapacitors by interleaving graphene nanoplatelets between carbon fibers and solid polymer electrolyte, in Journal of Composite Materials, **2019,** 53(10), 1401-1409**.** *10.1177/0021998318802622.*

[10] Atif Javaid and Muhammad Irfan, Multifunctional structural supercapacitors based on graphene nanoplatelets/carbon aerogel composite coated carbon fiber electrodes, in Material Research Express, **2019**, 6, 6016310. *10.1088/2053-1591/aae862.*

[11] Atif Javaid, Ahmad Shahzaib, Hammad Tahir, Munazza Ali, and Wajiha Younus, Investigation of mechanical and electrochemical performance of multifunctional carbon-fiber-reinforced polymer composites for electrical energy storage applications, in Journal of the Chemical Society of Pakistan, 41(03), 444-451, **2019**.

[12] Khadija Tul Kubra, Atif Javaid, Bebi Patil, Rehana Sharif, Ayesha Salman, Shamaila Shahzadi, Sofia Siddique, Sheeba Ghani, Synthesis and characterization of novel $Pr_6O_{11}/Mn_3O_4$ nanocomposites for electrochemical supercapacitors, in Ceramics International, **2019**, 45(6): 6819-6827. *10.1016/j.ceramint.2018.12.175*.

[13] Khadija Tul Kubra, Rehana Sharif, Bebi Patil, Atif Javaid, Shamaila Shahzadi, Ayesha Salman, Sofia Siddique, Ghulam Ali, Hydrothermal synthesis of neodymium oxide nanoparticles and its nanocomposites with manganese oxide as electrode materials for supercapacitor application, in Journal of Alloys and Compounds, **2019**, 815, 152104. 10.1016/j.jallcom.2019.152104.

[14] Khadija Tul Kubra, Atif Javaid, Rehana Sharif, Ghulam Ali, Fauzia Iqbal, Ayesha Salman, Fozia Shaheen, Annam Butt, Faiza Jan Iftikhar, Facile synthesis and electrochemical study of a ternary hybrid PANI/GNP/MnO2 as supercapacitor electrode material, in Journal of Materials Science: Materials in Electronics, **2020**, 31:12455–12466. 10.1007/s10854-020-03792-y.

[15] Atif Javaid, Hafiz Tanveer Ashraf, Muhammad Mustaghees, Arslan Khalid, Fire-retardant carbon/glass fabric reinforced epoxy sandwich composites for structural applications, in Polymer Composites Journal, **2021**, 42(1), p. 45-56. 10.1002/pc.25806.

[16] Usama Siddiqui, Hina Khan, Sarah Ghafoor, Atif Javaid, Anila Asif, Abdul Samad Khan, Analyses on mechanical and physical performances of nano-apatite grafted glass fibers based dental composites, in Materials Chemistry and Physics, **2021**, 263: 124188. 10.1016/j.matchemphys.2020.124188.

[17] Atif Javaid, Omer Khalid, Ahmed Shakeel, Sehrish Noreen, Multifunctional structural supercapacitors based on polyaniline deposited carbon fiber reinforced epoxy composites, in Journal of Energy Storage, **2021**, 33: 102168. 10.1016/j.est.2020.102168

[18] Atif Javaid, Shahbano Hashmi, Development of the Fire-Retardant Truss Core Sandwich Structures Using Carbon Fiber Reinforced Epoxy Composites, in Fire Technology, **2022**, 58: 1493–1507. 10.1007/s10694-021-01207-w.

[19] Atif Javaid, Sehrish Noreen, Mechanically robust structural hybrid supercapacitors with high energy density for electric vehicle applications, in Journal of Energy Storage, **2022**, 55(D): 105818. 10.1016/j.est.2022.105818.

[20] Yuan Cao, Bingcheng Luo, Atif Javaid, Chung-Man Lim, Ahmet Emre, Xiaohui Wang, Nicholas A. Kotov, Complex Materials with Stochastic Structural Patterns: Spiky Colloids with Enhanced Charge Storage Capacity, in Advanced Science, **2024**, 11: 2305085. 10.1002/advs.202305085

[21] Muhammad Zubair Afzal, Sarmad Ali Khan, Muhammad Umar Farooq, Atif Javaid, Saqib Anwar, Adeolu A. Adediran, Evaluation of chip breaker designs on tool life and hole integrity in drilling of HFRP/Al composite, in Scientific Reports, **2025**, 15: 18521. 10.1038/s41598-025-03793-z.

[22] Atif Javaid, Komal Naveed, Fire-retardant carbon-fibre reinforced multifunctional structural supercapacitors for energy storage applications, in Chemical Engineering Journal, **2025**, 524: 169399. 10.1016/j.cej.2025.169399.

[23] Atif Javaid, Sehrish Noreen, M. Zeeshan Akram, Next-generation multifunctional structural hybrid supercapacitors utilizing lithium cobalt oxide and manganese oxide interleaved with carbon aerogel-coated carbon fabrics reinforced epoxy composites, in Journal of Power Sources, **2026**, 664: 238932. 10.1016/j.jpowsour.2025.238932

## National Refereed Journal Publication

[1] Wasif Razzaq, Atif Javaid, *Synthesis & Characterization of cotton fiber reinforced starch/PVA biodegradable composite films*, in Journal of Faculty of Engineering & Technology, **2015**, 22(1).

[2] Muhammad Asim Iqbal, Muhammad Ahsan Iqbal, Atif Javaid, Synergistic effect of aluminum hydroxide and antimony trioxide on the flammability of phosphorous modified epoxy resin, in Pak. J. Engg. Appl. Sci., **2019**, 24, 50-56.

## Conference Proceedings

[1] A. Bismarck, E. S. Greenhalgh, K. K. C. Ho, **A. Javaid**, A. Kucernak, M. S. P. Shaffer, N. Shirshova, J. H. G. Steinke, "Structural power composites as energy storage devices", presented at *18th International Conference on Composite Materials*, Jeju Island, Korea, **2011**.

[2] A. Bismarck, P. T. Curtis, E. S. Greenhalgh, K. K. C. Ho, **A. Javaid**, A. Kucernak, H. Qian, M. S. P. Shaffer, N. Shirshova, J. H. G. Steinke, "Structural power composites for energy storage devices", presented at *14th European Conference on Composite materials*, Budapest, Hungary, **2010**.

## Poster Presentation

[1] A. Bismarck, E.S. Greenhalgh, K.K.C. Ho, **A. Javaid**, M.S.P. Shaffer, J.H.G. Steinke, "Structural polymer composite for power storage", presented at *Macro Group Young Researchers Meeting*, University of Nottingham, **2010. (*1st prize won in poster presentation)*.**

[2] A. Bismarck, E.S. Greenhalgh, K.K.C. Ho, **A. Javaid**, M.S.P. Shaffer, J.H.G. Steinke, "Structural power composites", presented at Symposium of *Green Aviation*, Department of Aeronautics, Imperial College London, **2011**

## Conference Presentations

[1] A. Bismarck, P. T. Curtis, E. S. Greenhalgh, K. K. C. Ho, **A. Javaid**, A. Kucernak, H. Qian, M. S. P. Shaffer, N. Shirshova, J. H. G. Steinke, "Structural power composites for energy storage devices", presented at *14th European Conference on Composite materials*, Budapest, Hungary, **2010**

[2] A. Bismarck, E. S. Greenhalgh, K. K. C. Ho, **A. Javaid**, A. Kucernak, M. S. P. Shaffer, N. Shirshova, J. H. G. Steinke, "Structural power composites as energy storage devices", presented at *The 17th Joint Annual Conference of CSCST and SCI,* Oxford, United Kingdom, **2010**.

[3] A. Bismarck, E. S. Greenhalgh, K. K. C. Ho, **A. Javaid**, A. Kucernak, M. S. P. Shaffer, N. Shirshova, J. H. G. Steinke, "Structural power composites as energy storage devices", presented at *The 18th International Conference on Composite Materials*, Jeju Island, Korea, **2011**.

[4] **A. Javaid**, "Electrical Energy storing multifunctional polymer composites for military applications" at Military Vehicles Research & Development Establishment (MVRDE), Rawalpindi, **2012**.

[5] **A. Javaid**, "A paradigm shift: Multifunctional smart composite systems innovation through nanotechnology, material science and life sciences, 4th International Symposium on Biomedical Materials: Translational Research and Commercialization", COMSATS, Lahore, **2014.**

[6] **A. Javaid**, "Multifunctional smart composite systems" at Conference on Frontiers of Nanoscience and Nanotechnology, PINSTECH, Islamabad, **2015**.

[7] **A. Javaid**, “A paradigm shift: Multifunctional Energy storing smart composite systems, innovation through nanotechnology and material sciences” at Bio-Inspired Green Science & Tech Symposium, New York, USA, **2022**.

[8] **A. Javaid**, “High-performance novel multifunctional structural supercapacitors for electrical energy storage applications” at Materials Research Society Spring Meeting 2023, San Francisco, USA, **2023**.