

DR.-ING. MUHAMMAD ATIF MAKHDOOM

MATERIALS ENGINEER | PROJECT MANAGER

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📍 Institute of Metallurgy & Materials Engineering
University of the Punjab Lahore 54590, Pakistan



Safety-focused and strategically agile credited with over 18 years' total experience and 16 years leadership delivering highly valued and engineered solutions, leading processes in automotive & Material Processing sector as senior Project Manager/Engineer.

Expert In: Project Management | Health, Safety & Environment | Operational Excellence & Controllorship | Material Management | Plant Commissioning | Process Optimization | Energy Saving | Plant Maintenance of FMCG & Process industry

Dynamic, versatile Lecturer with extensive experience in monitoring and assessment of students' course work, project work and examinations. Leveraged learning best practices, techniques/principles and faculty collaboration to launch the "Common Core Standards" focused on university-wide curriculum & technology integration, reading and writing standards that enable students to compete.

Highly resourceful engineer and project manager with hands-on experience in processing materials with the purpose of transforming into useful products, from precision-made parts to huge components. Adept at determining client requirements, investigating product feasibility, completing product research, running tests, overseeing quality control, and monitoring product fatigue. Proven ability to drive sustained strategy, deliver production growth form strategic partnerships and successfully overseeing complex projects.

~ *Technically proficient in ERP • SAP • MS Office, Visio • Origin • CATIA • SOLIDCast* ~

ACADEMIC CREDENTIALS

- 2011 Ph.D Materials Engineering** | Friedrich Alexander Universität (FAU) Erlangen-Nürnberg, Germany
Title – Low temperature processing route of silicon nanoparticle layers for solar cell applications
- 2011 M.Sc Metallurgical and Materials Engineering** | University of Engineering & Technology Lahore, Pakistan
Title – Effect of alloying elements on the kinetics of carburising process
- 2005 B.Sc Metallurgical and Materials Engineering** | University of Engineering & Technology Lahore, Pakistan
Title: Development and characterization of Al-Si-C composite via stir casting.

EMPLOYMENT HISTORY

July 2009 - Present

UNIVERSITY OF THE PUNJAB | Lahore, Pakistan

Assistant Professor

Undertook monitoring and assessment of students' course work, project work and examinations, and retained up-to-date and accurate records of their progress and achievement.

Developed own teaching materials, methods and approaches taking into account established or agreed practices and improved performance by reflecting on teaching design, delivery and analysing feedback.

Key Accomplishments / Responsibilities:

- ↪ As a University Teacher & core member of board of studies, lead and participate in the development and continuous upgradation of the curriculum for B.Sc and M.Sc/M.Phil engineering level in line with the regional and international technological needs.
- ↪ As a convener of Objective Base Education (OBE) system – Washington accord, involve in devising the new, and controlling the existing teaching methodologies within the institute along with the liaison of various institutional, alumni and industrial stake holders.
- ↪ Frequently conduct seminars, colloquia, technical sessions and workshops within the institute for faculty and students.
- ↪ Conduct lectures on key subjects as per expertise, directed individuals for competence enhancement in key areas using various exercises, tasks, assignments and projects.
- ↪ Acting as a "Student Coordinator and Carrier Councillor", deliver high quality academic, pastoral and personal support for students. As a personal tutor for multiple student groups, ensure that they receive guidance required to thrive academically and

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personally. Committed to delivering top-notch support and fostering a positive learning environment for all students under my care.

April 2008 - June 2009

KSB PUMPS COMPANY LIMITED | Hassanabdal, Pakistan

Assistant Manager (QHSE)

Stellar role as a core team member, actively participated in the rollout of IMS (Integrated Management System) & "HSE Transformation 2007" throughout the organization across the country.

Challenged with the responsibility of propelling strategic initiatives, and credited for effectively managing resources and utilised different statistical tools for the identification of problematic activity and took up issues with management for corrective actions.

Key Accomplishments:

- ↳ Strengthened compliance with standards for operations; developed and implemented QA system for KSB Foundry & Suppliers.
- ↳ Worked and led project for implementation of "Lean Six Sigma" in KSB Pumps in parallel to different Kaizen activities.

Oct. 2005 - April 2008

MILLAT EQUIPMENT LIMITED | Lahore, Pakistan

Assistant Manager (QA)

Being pioneer and core team member of PKR 700 million project, defined strategy to capitalize a holistic view on production, delivered strategic directions to a cross-functional and technically sophisticated team of individuals whilst effectively monitored the project status, handled many aspects of development and post-production support.

Cultivated professional relationships with a wide range of engineering and manufacturing personnel, both internal and external (3rd parties, Vendors) to the company, in order to expedite projects and ensure quality of incoming and outgoing manufactured products.

Key Accomplishments:

- ↳ Developed the complete QA department from design, construction, man-power hiring, training and system development.
- ↳ Enhanced operational efficiency by addressing the safety & operational requirements by deployment & dissemination of technology & best practices also supervised installation and initialization of equipment and machines.

Nov. 2004 - Aug. 2005

RIYADH HOUSE ESTABLISHMENT | Jeddah, Saudi Arabia

Site Engineer

Conceptualized and initiated site-planning projected to preparation for installation of machines and equipment by implementing best practices.

Entrusted with overall responsibility to supervise and perform all repair and operational activities to augment production.

Key Accomplishment:

- ↳ Delivered consistent quality of production by developing and enforcing good manufacturing practice and trouble shooting at site.

CONSULTANCY SERVICES

Nov. 2016 - April 2018

MATCHLESS ENGINEERING (PVT) LIMITED | Lahore, Pakistan

Chief Consultant (≤ 200 employees)

Supervised PKR 50 million project and expertly performed duties as a strategic overlay for institutionalization of Project Management Framework, rendered expertise in organisational development, strategy, data management, technology solutions, monitoring & evaluation of products development at all phases.

Steered strategies, propose and execute tactics to control and administer B2B and B2C supply chain cycle to ensure adherence to time frames, budgets and levels of performance through the project life cycle.

Key Accomplishment:

- ↳ With a focus towards continuous improvement and organizational development, devised appropriate Health, Safety and Environmental controls and QA systems for compliance within manufacturing segment while directing overall organizational systems.

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April 2012 - Dec. 2012

RAVI AUTOS (PVT) LIMITED | Lahore, Pakistan

Foundry Technical Consultant

Directed stratagems and proficiently executed duties as a technological consultant, monitoring & assessment of products development at all phases from raw material to final product.

Key Accomplishments:

- ↳ Streamlined, rectified and clarified all operations and activities in accordance with the standards operating procedures for optimum product development.
- ↳ Spearheaded all project and supply chain endeavours with health and safety by implementing best practices.

PROFESSIONAL DEVELOPMENT

Certifications:

- ↳ Supply Chain Management
- ↳ Balance Score Card and KPIs Development
- ↳ Certified Quality Professional
- ↳ SOLIDCast Simulation Software for Castings
- ↳ BUEHLER Course on Metallography
- ↳ ELSEVIER Certified Peer Reviewer Course
- ↳ Material Oriented Micro/Nano Manufacturing: Modelling, Experiment and Applications
- ↳ 4th CENEM Summer School for X-Ray Scattering 2018
- ↳ Operational & Basic Troubleshooting of SHIMADZU Testing Equipment
- ↳ Entrepreneurship I: Laying the Foundation

Journal Reviewer:

- ↳ ACS Omega
- ↳ Materials Chemistry and Physics

Workshop and Conferences:

- ↳ MS&T 12 at Pittsburgh, USA (Speaker)
- ↳ International Workshop on Biomaterials and Tissue Engineering at IST Islamabad, Pakistan.
- ↳ Workshop on Objective Based Education (OBE) at IMME- University of the Punjab Lahore, Pakistan
- ↳ Workshop on OBE/OBA for PEC PEVs, Faculty and Quality Directors by Pakistan Engineering Council
- ↳ Workshop on Non-Destructive Evaluation of Weldments & their Remedies (Organiser)
- ↳ Workshop on ASME Section IX, Section VIII - division-1 (Organiser)
- ↳ ICAMSEE 2021 at NED-UET Karachi, Pakistan (Invited speaker)
- ↳ Workshop on Casting for Industrial Applications at IST Islamabad, Pakistan (Guest speaker)
- ↳ Workshop on Capacity Building on Objective Based Education (OBE) Implementation at IQTM-University of the Punjab Lahore, Pakistan
- ↳ TestXpo 2011 - 20th International Forum for Materials Testing at Zwick/Roell Ulm, Germany

Awards and Achievements:

- ↳ 2nd Prize at Engineering CAPSTONE Expo-22
- ↳ 3rd Prize at National Projects Competition at Pakistan Auto Show-22
- ↳ Incentive Awards for the years 2016, 2017, 2019, 2021 by University of the Punjab Lahore, Pakistan.
- ↳ 3rd Prize at "Invention to Innovation Summit 2024" held at National level.

Membership of Professional Bodies:

- ↳ Association for Iron & Steel Technology (AIST)
- ↳ The American Ceramic Society (ACerS)
- ↳ Pakistan Engineering Council
- ↳ QEC/OBE Committee of IMME-University of the Punjab Lahore, Pakistan (Convener)
- ↳ Curriculum development committee of IMME-University of the Punjab Lahore, Pakistan for B.Sc./M.Sc./M.Phil. programs.
- ↳ Board of Studies, IMME-University of the Punjab Lahore, Pakistan
- ↳ Departmental Doctoral Program Committee (DDPC), IMME-University of the Punjab Lahore, Pakistan
- ↳ GRE/HAT Test Committee of IMME-University of the Punjab Lahore, Pakistan

Community Services:

- ↳ Convener of Science Communication Society (SciCom) of IMME-University of the Punjab Lahore, Pakistan
- ↳ Convener of IMME journal, Website and Media Committee at IMME-University of the Punjab Lahore, Pakistan
- ↳ Organiser of Industrial Tours at IMME-University of the Punjab Lahore, Pakistan
- ↳ Convener of Seminar / Conferences organisation committee of IMME-University of the Punjab Lahore, Pakistan

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Languages:

- ↪ English (Expert User)
- ↪ Urdu (Native)
- ↪ German (A2)
- ↪ Arabic (Moderate User)

REFERENCES

- ↪ Prof. Dr. Furqan Ahmad (Chairman)
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- ↪ Prof. Dr. Carola Kryschi
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PATENT & PUBLICATIONS

Patent:

- ↪ V. Sgobba, **M. Atif Makhdoom**, N. Gawehns, E. Stern, H. J. Egelhaaf, C. J. Brabec, Verfahren zum Entfernen einer Oxidschicht bei Silizium-Nanopartikeln.
(Patent application No: DE 10 2016 216 125.3).

Publications:

- ↪ **Muhammad Atif Makhdoom***, Muhammad Abubakar Qamar, Iftikhar Ahmed Channa, Muhammad Awais, Muhammad Umer, Muhammad Asad, Zaeem ur Rehman, Abdulaziz Alhazaa, (2024), "High Strength Resistance Spot Welding of Dissimilar Metals without Cover Plate", ACS Omega, (Submitted).
- ↪ **Muhammad Atif Makhdoom***, Carola Kryschi, (2024) "Progress on Solution Processed Si-Nanoparticle Solar Cells towards New Generation Photovoltaics", Optik, 300, 171626.
- ↪ Ehsan Ul Haq, Furqan Ahmed, Faseeh U Rehman, Iftikhar Ahmed Channa, **Muhammad Atif Makhdoom**, Junaid Shahzad, Tooba Shafiq, Muhammad Zain-ul-Abdein, Muhammad Ali Shar, Abdulaziz Alhazaa, (2023), "Synthesis and Characterization of a Titanium-Based Functionally Graded Material-Structured Biocomposite using Powder Metallurgy", ACS Omega.
- ↪ Laraib Sarfaraz Khanzada, **Muhammad Atif Makhdoom***, Xianzhong Lin, Hamed Azimi, Christoph J. Brabec, (2022), "Photocurrent Generation and Charge Transport Mechanism Study in Solution-Processed CZTS Thin Films", Optik, 272, 170381.
- ↪ **Muhammad Atif Makhdoom***, Furqan Ahmad, Iftikhar Ahmed Channa, Aqil Inam, Fahad Riaz, Sajid Hussain Siyal, Muhammad Ali Shar, Abdulaziz Alhazaa, (2022), "Effect of Multiple Thermal Cycles on the Microstructure and Mechanical Properties of AISI 1045 Weldments", ACS Omega, 7 (46), 42313.
- ↪ Muhammad Zain-ul-Abdein, Furqan Ahmed, Iftikhar Ahmed Channa, **Muhammad Atif Makhdoom**, Raza Ali, Muhammad Ehsan, Abdullah Aamir, Ehsan Ul Haq, Muhammad Nadeem, Hafiz Zahid Shafi, Muhammad Ali Shar, Abdulaziz Alhazaa, (2022), "Synthesis of Geopolymer from a Novel Alumino-Silicate Based Natural Soil Precursor Using Electric Oven Curing for Improved Mechanical Strength", Materials, 15, 7757.
- ↪ Muhammad Faheem Maqsood, Mohsin Ali Raza, Zaeem Ur Rehman, Asima Tayyeb, **Muhammad Atif Makhdoom**, Faisal Ghafoor, Umar Latif, Muhammad Farooq Khan, (2022), "Role of Solvent Used in Development of Graphene Oxide Coating on AZ31B Magnesium Alloy: Corrosion Behavior and Biocompatibility Analysis", Nanomaterials, 12, 3745.
- ↪ Fatima Masood, **Muhammad Atif Makhdoom***, Iftikhar Ahmed Channa, Sadaf Jamal Gilani, Ahmad Khan, Rabia Hussain, Syeda Ammara Batool, Kiran Konain, Saeed Ur Rahman, Abdul Wadood, May Nasser bin Jumah, Muhammad Atiq ur Rehman, (2022), "Development and Characterization of Chitosan and Chondroitin Sulfate Based Hydrogels Enriched with Garlic Extract for Potential Wound Healing/Skin Regeneration Applications", Gels, 8, 676.
- ↪ Syeda Ammara Batool, Ushna Liaquat, Iftikhar Ahmed Channa, Sadaf Jamal Gilani, **Muhammad Atif Makhdoom***, Muhammad Yasir, Jaweria Ashfaq, May Naseer Bin Jumah, Muhammad Atiq ur Rehman, (2022), "Development and Characterization of Zein/Ag-Sr Doped Mesoporous Bioactive Glass Nanoparticles Coatings for Biomedical Applications", Bioengineering, 9, 367.
- ↪ Furqan Ahmed, Muhammad Zain-ul-abdein, Iftikhar Ahmed Channa, Muhammad Kamran Yaseen, Sadaf Jamal Gilani, **Muhammad Atif Makhdoom**, Muhammad Mansoor, Usman Shahzad, May Nasser Bin Jumah, (2022), "Effect of Ultrasonic Surface Mechanical Attrition Treatment Induced Nanograins on the Mechanical Properties and Biocompatibility of Pure Titanium", Materials, 15 (15), 5097.
- ↪ Iftikhar A. Channa, Jaweria Ashfaq, Sadaf Jamal Gilani, Ali Dad Chandio, Sumra Yousuf, **Muhammad Atif Makhdoom**, May Nasser bin Jumah, (2022), "Sustainable and Eco-Friendly Packaging Films Based on Poly (Vinyl Alcohol) and Glass Flakes" Membranes, 12 (7), 701.
- ↪ Muhammad Ans, **Muhammad Atif Makhdoom***, Muhammad Faisal Irfan, Anzum Al Abir, (2022), "Optimized Modelling and Kinetic Analysis of Nickel Recovery from Waste Orthodontic Implants using Response Surface Methodology", Journal of Minerals Engineering, 175, 107279.

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- ↪ Iftikhar Ahmed Channa, Muhammad Rizwan, Ali Dad Chandio, **Muhammad Atif Makhdoom**, Aqeel Ahmed Shah, Muhammad Ali Shar, Asif Mahmood, (2021), "Process Parameter Optimization of a Polymer Derived Ceramic Coating for Producing Ultra-High Gas Barrier", *Materials*, 14 (22), 7000.
- ↪ **Muhammad Atif Makhdoom***, Vito Sgobba, Iftikhar Ahmed Channa, Nidia Ghewins, (2021), "Producing Oxide Free Silicon Nanocrystals – A Novel & Benign Approach", *Optik*, 246, 167789.
- ↪ Ali Dad Chandio, Iftikhar Ahmed Channa, Muhammad Rizwan, Shakeel Akram, Muhammad Sufyan Javed, Sajid Hussain Siyal, Muhammad Saleem, **Muhammad Atif Makhdoom**, Tayyaba Ashfaq, Safia Khan, Shahid Hussain, Munirah D. Albaqami, Reham Ghazi Alotabi, (2021), "Polyvinyl Alcohol and Nano-clay based Solution Processed Packaging Coatings", *Coatings*, 11 (8), 942.
- ↪ N Jhamat, H Amaad, G Mustafa, N. A Nawaz, M Bashir, **Muhammad Atif Makhdoom**, (2021), "Entropic Distance-based Classification of Tourist Attractions Using K* Learner: An Instance-based Approach", *Journal of the Research Society of Pakistan*, 58 (1), 123
- ↪ **Muhammad Atif Makhdoom***, Vito Sgobba, Laraib Sarfaraz Khanzada, S. Fladischer, E. Spiecker, (2019), "Tailoring the Charge Transport Properties of Printable Silicon Nanocrystals by Conjugated Organic Ligands", *Physica Status Solidi A*, 216 (11), 1900040.
- ↪ **Muhammad Atif Makhdoom***, Laraib Sarfaraz Khanzada, Vito Sgobba, (2019), "Charge Transport Mechanism in Thick-Films of Surface Functionalized Silicon Nanocrystals", *Journal of Nanoelectronics and Optoelectronics*, 14 (10), 1401-1407.
- ↪ **Muhammad Atif Makhdoom***, Akhlaq Ahmad, Muhammad Kamran, Kamran Abid, Waseem Haider, (2017), "Microstructural and Electrochemical Behavior of 2205 Duplex Stainless Steel Weldments", *Surfaces and Interfaces*, 9, 189-195.
- ↪ Tahir Ahmad, Syed Shehzad Raza, Ehsan Aleem, Muhammad Kamran, Umar Manzoor, **Muhammad Atif Makhdoom**, Rafiq Ahmad, S. Mukhtar (2017). "Improvement in Mechanical and Thermal Properties of Unsaturated Polyester-Based Hybrid Composites", *Iranian polymer journal*, 26 (4), 305-311.
- ↪ T. Kazmi, K. A. Bhatti, Gul Hameed Awan, W. Amin, Tahir Ahmad, Muhammad Kamran, **Muhammad Atif Makhdoom**, (2016), "Structural, Morphological, and Mechanical Properties of Laser Irradiated AA-2024-T3 Aluminum Alloy Sheet", *Journal of Pakistan Institute of Chemical Engineers*, 44 (1).
- ↪ **Muhammad Atif Makhdoom***, Muhammad Kamran, Gul Hameed Awan and S. Mukhtar (2013). "Effect of Multipasses on Microstructure and Electrochemical Behavior of Weldments", *Metallurgical and Materials Transactions A*, 44 (12), 5505-5512.