

Iftikhar Ahmed Channa, PhD

Room No. 40, first floor, Department of Metallurgical Engineering, NEDUET, Karachi

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ORCID: [Iftikhar Ahmed Channa \(0000-0002-5585-8886\)](https://orcid.org/0000-0002-5585-8886) - **ORCID Scopus:** [Channa, Iftikhar Ahmed - Scopus](https://orcid.org/0000-0002-5585-8886)

Google scholar: <https://scholar.google.com/citations?user=eW3DAUsAAAAJ&hl=en>

CAREER OBJECTIVE

A dedicated researcher and educator with 17+ years of experience in advanced materials, solar energy technologies, and packaging films. I aim to contribute to the Department of Metallurgical Engineering at NED University by fostering interdisciplinary research, mentoring future leaders, and advancing innovations in Renewable Energy Materials. My vision aligns with global challenges and opportunities, particularly in clean energy, sustainable manufacturing, and material optimization.

AREAS OF RESEARCH INTEREST

Thin Film Technology, Organic Photovoltaics, Sustainable Energy Solutions, Barrier Coatings, Advanced Materials for Energy Applications, Self-Healing and Superhydrophobic Coatings, Biodegradable and Edible Packaging, Food sensors, Sustainable Smart Packaging, Health and Safety in Engineering and Research.

WORK EXPERIENCE (ACADEMIC & ADMINISTRATIVE)

- Oct 2025 – date** **Associate Professor**, Department of Metallurgical Engineering,
NED University of Engineering & Technology, 75270, Karachi, Pakistan
- May 2016 – Sep 2025** **Assistant Professor**, Department of Metallurgical Engineering,
NED University of Engineering & Technology, 75270, Karachi, Pakistan
- Apr 2024 – Jul 2024** **Visiting Research Scientist**, Institute Materials for Energy and Electronic
Technology (iMEET), *Friedrich Alexander University of Erlangen-Nürnberg,*
Martenstr. 7, 91058, Erlangen, Germany
- Jan 2010 – Apr 2024** **Coordinator/Class Adviser, TE (Metallurgical Engineering)**
NED University of Engineering & Technology, 75270, Karachi, Pakistan
With breaks
- Feb 2019 – Dec 2019** **Visiting Research Scientist**, Solar Factory of the Future as part of Energy Campus
Nürnberg, Germany, *ZAE Bayern, Immerwahrstr. 2a, 90158, Erlangen, Germany*
- Oct 2014 – Jan 2019** **Visiting Research Scientist**, Institute Materials for Energy and Electronic
Technology (iMEET), *Friedrich Alexander University of Erlangen-Nürnberg,*
Martenstr. 7, 91058, Erlangen, Germany
- Mar 2010–Apr 2016** **Lecturer**, Department of Metallurgical Engineering
NED University of Engineering & Technology, 75270, Karachi, Pakistan
- Mar 2009–Feb 2010** **Lecturer**, Materials Engineering Department
NED University of Engineering & Technology, 75270, Karachi, Pakistan
- Jun 2008–Feb 2009** **Trainee Engineer**, Production Department,
Jin Kwang JAZZ, Bin Qasim town, near port Qasim Karachi, Pakistan
- Feb 2008–May 2008** **Lab-Lecturer**, Department of Metallurgy and Materials
Mehran University of Engineering and Technology, 76062, Jamshoro, Pakistan

KEY ROLES PLAYED DURING ACADEMIC CAREER

Mar 2011–Jul 2014	Area coordinator / ISO coordinator, Department of Metallurgical Engineering
Apr 2009–Feb 2010	Acting Workshop Superintendent, Department of Materials Engineering
Apr 2009–Jul 2014	Faculty Advisor, Metallurgical Engineers' Society (MES)
Jan 2010 –Jul 2014	In-charge Metallography Lab, Department of Metallurgical Engineering
Oct 2015 –Dec 2019	Resource person for operations/ trainings of OTR and WVTR devices, ZAE Bayern
Sep 2015 –Dec 2019	In-charge Chemical Laboratory, Solar Factory of the Future, ZAE Bayern
Sep 2017–Dec 2019	Photographer, Solar Factory of the Future, ZAE Bayern
Feb 2021– to date	Developed Thin Film Lab at Department of Metallurgical Engineering
Feb 2021– to date	In-charge Thin Film Lab, Department of Metallurgical Engineering
Apr 2021– 2022	Member board of studies (Department of Metallurgy and Materials)
Feb 2022– to date	Member Health and Safety committee (Departmental level)
May 2024– to date	Member board of studies (Department of Metallurgical Engineering)
Jun 2020- May 2022	Curriculum development for the Master in Metallurgical Engineering
Aug 2023 – to date	Member Steering committee FYDP
Jan 2020 – to date	Supervised more than 25 Master dissertations and 5 Ph.D projects
Jan 2020 – to date	Secured funding of more than 30 million PKR for Research
Mar 2014 – to date	Published around 57 research articles in peer reviewed international journals
Sep 2023–Dec 2024	Edited a book for Springer Nature "Thin Films and Coatings: Engineering Applications"
Mar 2022 – to date	Filed 12 patents at IPO office Karachi

ACADEMIC QUALIFICATION

Apr 2024–Jul 2024	Post Doctorate Research Experience (4 months under DAAD's Re-invitation programme for its former scholarship holders 2024) – Institute Materials for Energy and Electronic Technology (iMEET), Friedrich Alexander University of Erlangen-Nürnberg, 91058, Erlangen, Germany
Oct 2014–Dec 2019	PhD (Materials Sciences – Renewable Energy) with Outstanding Achievement award: Friedrich Alexander University of Erlangen- Nürnberg, 91058, Erlangen, Germany
Jun 2009–May 2011	Master of Engineering (Materials) NED university of Engineering and Technology, Karachi, Pakistan
Jan 2004–Dec 2007	Bachelor of Engineering (Metallurgy and Materials) Mehran university of Engineering and Technology, 76062, Jamshoro, Pakistan

QUALITY ASSURANCE, ACCREDITATION & CURRICULUM MAPPING EXPERIENCE

2020 – 2022	Board of Studies member (BoS) , Department of Materials Engineering, NED University of Engineering & Technology, Karachi, Pakistan
2024 – date	Board of studies member (BoS) , Department of Metallurgical Engineering, NED University of Engineering and Technology, Karachi, Pakistan (PhD program)
2021 – 2022	External Member, Industrial Advisor Board, Department of Metallurgy and Materials Engineering , Dawood University of Engineering and Technology, Karachi, Pakistan

PATENTS FILED

Sep 2019	S.N. Ali, I.A. Channa , A.D. Chandio, S. Javed, S. Naeem, Promethazine-Curcumin Charge Transfer Complex for Solar Cell Application, Patent application number _____ (filing date____) IPO Pakistan
Nov 2023	S. N. Ali, A.D. Chandio, I. A. Channa , M. Aqeel, Improved Extraction of Sugarcane Wax from Bagasse Obtained from Sindh Sugar Mills of Pakistan: Patent application number 810/2023 (filing date: 30.11.2023) IPO Pakistan.
Jul 2024	I.A. Channa , S. N. Ali, A. D. Chandio, M. J. Ahmed, Method of Producing Fatty Acid Cellulose Esters from Acid Activated Clay-based Derivatisation, and Method of Preparing Packaging Films using the Same: (Patent application number: 515/2024 , filing date 24.07.2024) IPO Pakistan

Sep 2024	S. N. Ali, A. D. Chandio, I.A. Channa , R. Shamshad, Novel sugarcane wax -based Atorvastatin Nanoparticles for effective Cholesterol reduction, Patent Application Number 636/2024 (Filing date: 09.09.2024) IPO Pakistan.
May 2024	I.A. Channa , A.D. Chandio, S. N. Ali, J. Ashfaq, Biodegradable and Edible Packaging Films Derived from Gelatin, Papaya, and Soy Protein for Sustainable Food Packaging Applications, Patent application number: 766/2024 (filing date: 05.11.2024) IPO Pakistan.
Nov 2024	I.A. Channa , A.D. Chandio, A. Ghaffar, J. Ashfaq, Intelligent Biodegradable Packaging: pH-Responsive Films from Natural Extracts for Enhanced Food Safety and Sustainability, Patent application number: 767/2024 (Filing date: 05.11.2024) IPO Pakistan.
Nov 2024	M. Ghaffar, I. A. Channa , N. A. Khan, M. Misbah, A. L. Ayub, A. M. Sajid, S. U. Ahmed, Sensor Based Water Quality Monitoring Using IoT Application in Real Time, Patent application number 756/2024 (filing date: 05.11.2024) IPO Pakistan.
Nov 2024	A.D. Chandio, I.A. Channa , J. Ashfaq, Manufacturing of floor tiles from the plastic waste, Patent application number 757/ 2024 (filing date 05.11.2024) IPO Pakistan
Nov 2024	A. Ghaffar, I.A. Channa , M. M. Hussain, A.L Ayub, A.M. Sajid, S. U. Ahmed, Real-Time Satellite-Based Water Quality Monitoring System Using Google Earth Engine and IoT Integration, Patent application number 800/2024 (filing date 13.11.2024) IPO Pakistan.
Dec 2024	A. Ghaffar Memon, I.A. Channa , Customized solar distillation design for household applications to treat sea water for distillation, Patent application number 943/2024 (filing date 24.12.2024)
Jan 2025	A.D Chandio, A. Azmat, S. Faraz. I.A Channa, New Titanium alloy as an impactful replacement of Ti6Al4V alloys for biomedical applications. Application filing processed initiated.
Sep 2025	Aslam Bhutto, I.A. Channa , Utilization of Thar Coal Fly Ash in Manufacturing of Clay Bricks. Application filing processed initiated.

SELECTED INTERNATIONAL PUBLICATIONS (Total publications 48)

1. S. Ahmad and **I.A. Channa**, Mathematical Relationship between Ferritic, Pearlitic and Average Grain Size of Steel, *Journal of Modern Science and Technology*, Vol. 1. No. 1. May 2013, Pp.1-18
2. **A. Channa**, A. Distler, M. Zaiser, C.J. Brabec, H.-J Egelhaaf, Thin Film Encapsulation of Organic Solar Cells by Direct Deposition of Polysilazanes from Solution (Publisher John Wiley and Sons 2019, Journal: Advanced Energy Materials) (Funding agency DAAD, **JCR impact Factor 29.46**) <https://doi.org/10.1002/aenm.201900598>
3. A.D. Chandio, A.A. Shah, **I.A. Channa**, W. Salman, Variation in Mechanical Properties of SAE 1006 Interstitial Free (IF) Steel Sheets During Cold Rolling, *NUST Journal of Engineering Sciences*, Vol. 13, No. 2, 2020
4. A.A. Shah, M.A. Bhatti, A. Tahira, A.D. Chandio, **I.A. Channa**, A.G. Sehto, S. Ebrahim, Z.H. Ibupoto, Facile synthesis of copper doped ZnO nanorods for the efficient photodegradation of methylene blue and methyl orange, *Ceramic International*, 2019 (**JCR Impact factor 4.5**) <https://doi.org/10.1016/j.ceramint.2019.10.024>
5. **I.A. Channa**, A.D. Chandio, M. Rizwan, A.A. Shah, M.A. Shar, Solution coated PVB/mica flake coatings for the encapsulation of organic solar cells, Materials MDPI, Published Manuscript) (Published May 12, 2021) (**JCR Impact factor 3.76**) <https://doi.org/10.3390/ma14102496>
6. **I.A. Channa**, A. Distler, B. Scharfe, S. Feroze, K. Forberich, B. Lipovšek, Christoph J. Brabec and H.-J. Egelhaaf, Solution processed oxygen and moisture barrier based on glass flakes for encapsulation of Organic (Opto-) Electronic Devices, Journal of Printed and flexible Electronics, (Published June 11, 2021) (**JCR Impact factor 3.52**) <https://doi.org/10.1088/2058-8585/ac0716>
7. **I.A. Channa**, A.D. Chandio, M. Rizwan, M. A. Makhdoom, S.A. Abro, A. A. Shah, J. Bhatti, Polyvinyl Alcohol and Nano-clay based Solution Processed Packaging Films, *Coatings* (Published on August 6, 2021 in *Coatings*, JCR Impact factor 3.12) <https://doi.org/10.3390/coatings11080942>
8. M.A. Makhdoom, V. Sgobba, **I.A. Channa**, producing oxide free silicon nanocrystals, a novel & benign approach, Published on August 22, 2021, in *Optik*, Impact factor 2.97) <https://doi.org/10.1016/j.ijleo.2021.167789>
9. **I.A. Channa**, M. Rizwan, A.D. Chandio, M.A. Makhdoom, A.Shah, M. A. Shar, A. Mahmood, Optimizing the Process Parameters of Solution Based Silica Coatings as ultra-high gas barrier thin films. *Materials* (Accepted on Oct 27, 2021) (JCR impact factor 3.76) <https://doi.org/10.3390/ma14227000>
10. J. Ashfaq, **I.A.Channa**, A. A. Shaikh, A.D. Chandio, A. A. Shah, Bushra Bughio, Ashfaq Birhmani, Sultan Alshehri, M. Ghoneim "Gelatin- and Papaya-Based Biodegradable and Edible Packaging Films to Counter Plastic Waste, *Materials* (Published January 25, 2022) (**Materials MDPI Impact factor 3.76**) <https://doi.org/10.3390/ma15031046>

11. S.Yousuf, P. Shafiqh, **I.A. Channa**, M. Rizwan, Tanveer Ahmed Khan, Belal Alsubari, Mustabshira Gul, Chemical and Thermal Characterization of Cement Mortar Containing Ground Palm Oil Fuel Ash as a Partial Cement Replacement. *Journal of Wuhan University of Technology-Materials Science*. (Published, Impact factor: 0.95) <https://doi.org/10.1007/s11595-023-2733-1>
12. **I.A. Channa**, J. Ashfaq, S.J. Gilani, A.D Chandio, A.A. Shah, M.N.b. Jumma, UV Blocking and oxygen barrier coatings based on Polyvinyl alcohol and zinc oxide nanoparticles, *Coatings* (Published June 25th, 2022, **Coatings**, Impact factor 3.12) <https://doi.org/10.3390/coatings12070897>
13. **I.A. Channa**, J. Ashfaq, S.J. Gilani, Sumra Y. A. Makhddom, A.D Chandio, M.N.b. Jumma, Sustainable and Eco-friendly packaging films based on polyvinyl alcohol and glass flakes, *Membranes* (Published online July 9th, 2022, **Membranes**, impact factor 4.6) <https://doi.org/10.3390/membranes12070701>
14. F.Ahmed, M. Zain-abdein *, **I. A. Channa**, M. K. Yaseen, S. J. Gilani, M. A. Makhddoom, M.Mansoor, U. Shahzad, M.N.B. Jumah, Effect of ultrasonic surface mechanical attrition treatment induced nanograins on the mechanical properties and biocompatibility of pure titanium (Published July 2022, **Materials MDPI**, impact factor 3.76) <https://doi.org/10.3390/ma15155097>
15. S. A. Batool, U. Liaquat, **I.A. Channa**, S. J. Gilani, M.A. Makhddoom*, M.Yasir, J. Ashfaq, M.N.B. Jumah, M. A. Rehman*, Development and Characterization of Zein/Ag-Sr Doped MBGNs Coatings for Biomedical Applications (Published manuscript, August 4, 2022 in **Bioengineering MDPI**, impact factor 4.7) <https://doi.org/10.3390/bioengineering9080367>
16. M.A. Bhatti, S.J. Gilani, A.A. Shah, **I.A.Channa**, K.F. Almani, A.D. Chandio, M.N.B. Jumah, Z.H Ibhuboto, Effective removal of methylene blue by surface alteration of TiO₂ with Ficus carica leaf extract under visible light (Published manuscript August 12, 2022, **Nanomaterials MDPI**, impact factor 5.7) <https://doi.org/10.3390/nano12162766>
17. N.Bashir, H.M. Saad, M. Rizwan, S. Bengol, **I.A.Channa**, Effect of cobalt nanoparticles on mechanical properties of Sn-58Bi Solder joint, (*Journal of Material science: Materials in Electronics*, impact factor 2.4) <https://doi.org/10.1007/s10854-022-09035-6>
18. F. Masood, M. A. Makhddoom, **I.A. Channa**, S. J. Gilani, A. Khan, R. Hussain, S. A. Batool, K. Konain, Development and Characterization of Garlic Loaded Chitosan and Chondroitin Sulfate Based Hydrogels for potential Wound Healing/Skin Regeneration Applications (Published in Journal **‘Gels’** impact factor 4.4) <https://doi.org/10.3390/gels8100676>
19. S.N.S Bukhari, A.A. Shah, M.A. Bhatti, A. Tahira, **I.A. Channa**, A. K. Shah, A.D Chandio, W. Mahdi, S. Alshehri; Psyllium husk assisted synthesis of ZnO nanostructures with improved photocatalytic properties for the degradation of methylene blue (MB) (Published in **Nanomaterials MDPI**, Impact factor 5.7) <https://doi.org/10.3390/nano12203568>
20. S. Asrar, A. Azmat, **I.A. Channa**, J. Ashfaq, S. Feroze, A.D. Chandio, M.A. Shar, Al-Hazaa, Comparative study of Titanium based alloys via nano-indentation technique. (Accepted on Oct 21, 2022 in **Crystals MDPI**, Impact factor 2.8) <https://doi.org/10.3390/cryst12111537>
21. M.Z. Abdein, Furqa. A, **I.A.Channa**, M.A. Makhddoom, R. Ali, M. Ehsan, A. Amir, H.Z. Shafi, M.A. Shar, AlHazaa, Synthesis of geopolymer from a novel alumino-silicate based natural soil precursor using electric oven curing for improved mechanical strength. (Published on November 4th, 2022 in **Materials**, MDPI, impact factor 3.78) <https://doi.org/10.3390/ma15217757>
22. A.D. Chandio, A.H. Pato, **I.A. Channa**, S.J. Gilani, A.A. Shah, J. Ashfaq, M.N.b Jumma, Exploring the Heterocatalytic proficiencies of ZnO Nanostructures in the simultaneous photo-degradation of Chlorophenols (Published on Nov 3rd, 2022 in **Sustainability MDPI**, Impact factor 3.8) <https://doi.org/10.3390/su142114562>
23. A. G. Memon, **I. A. Channa**, A.A. Shaikh, J. Ahmad, A. F. Soomro, A. S. Giwa, Z. T.Baig, W. A. Mahdi, S. Alshehri, Citrate-capped AuNP fabrication, characterization and comparison with commercially produced nanoparticles, **Crystals MDPI**, Published on 2 Dec 2022 <https://doi.org/10.3390/cryst12121747>
24. **I.A.Channa**, J. Ashfaq, M. A. Siddiqui, A.D. Chandio, M.A. Shar, AlHazaa, Multi shaded edible and biodegradable films based on gelatin and starch for the packaging applications, (Published Nov, 2022 in **Polymers**, MDPI, impact factor 4.9) <https://doi.org/10.3390/polym14225020>
25. A.D. Chandio, **I.A. Channa**, Asif Ahmed Shaikh, Shabir Madad, Aqeel A. Shah, Jaweria Ashfaq, M.A. Shar, AlHazaa, Beneficiation of Low-grade Dilband Iron Ore by Reduction Roasting, submitted in **Metals**, MDPI. <https://doi.org/10.3390/met13020296>
26. A.D. Chandio, A.A. Shaikh, **I.A. Channa**, M. Shahzad, J. Bhatti, S. Bhutto, Synthesis of graphene oxide by modified Hummers method and with improved oxidation through ozone treatment, *Journal of Chemical Society of Pakistan* (Published Feb 2023) **Journal of Chemical Society of Pakistan** doi.org/10.52568/001190/JCSP/45.01.2023

27. M.A Makhdoom, F. Ahmed, **I.A. Channa**, A. Inam, F. Riaz, S. H. Siyal, M.A Shar, A. AlHazaa, Effect of Multiple Thermal Cycles on the Microstructure and Mechanical Properties of AISI 1045 Weldments. *ACS Omega*, Published November 9, 2022 <https://doi.org/10.1021/acsomega.2c05249>
28. M. Sadia, N. M. Zain, N. M. Daud, F. Abdullah, A. D. Chandio, **I. A. Channa**, S. A. A. Taqvi, N. A. Malek, S. Saidin, Electrospun Membrane Fabrication in Assisting Tissues Healing, 2023, *Journal of Human Centered Technology*, <https://doi.org/10.11113/humentech.v2n2.55>
29. S. Feroze, A. Distler, K. Forberich, **I. A. Channa**, B. Doll, C. J. Brabec, H. J. Egelhaaf; Comparative analysis of outdoor energy harvest of organic and silicon solar modules for applications in BIPV systems, 2023, *Solar Energy*, JCR Impact factor 7.1) <https://doi.org/10.1016/j.solener.2023.111894>
30. J. Ashfaq, **I.A. Channa**, A. G. Memon, I.A. Chandio, A. D. Chandio, M.A. Shar, M. Alsalihi, S. Devanesan, Enhancement of Thermal and Gas Barrier Properties of Graphene-Based Nanocomposite Films, *ACS Omega*, Published October 2023(JCR Impact factor 3.8), <https://doi.org/10.1021/acsomega.3c02885>
31. A. Ghaffar, I.A. Channa, A.D. Chandio; Mitigating UV-Induced Degradation in Solar Panels through ZnO Nanocomposite Coatings, 2024, *Sustainability*, JCR impact factor 3.9 <https://doi.org/10.3390/su16156538>
32. MJ Ahmed, J Ashfaq, Z Sohail, **I.A Channa**, A Sanchez-Ferrer, SN Ali, AD Chandio, Lignocellulosic bioplastics in sustainable packaging–Recent developments in materials design and processing: A comprehensive review, *Sustainable Materials and Technologies*, 2024, JCR Impact factor 8.5, <https://doi.org/10.1016/j.susmat.2024.e01077>
33. S. N S. Bukhari, A.A. Shah, W. Liu, **I.A.Channa**, A. D..Chandio, I.A. Chandio, Z..H. Ibupoto, Activated carbon based TiO2 nanocomposites (TiO2@ AC) used simultaneous adsorption and photocatalytic oxidation for the efficient removal of Rhodamine-B (Rh–B), *Ceramic International* 2024, JCR impact factor 4.4, <https://doi.org/10.1016/j.ceramint.2024.07.440>
34. Z. Suhail, J. Ashfaq, **I. A. Channa**, M. Sadia, A. D. Chandio, B. A. Sharmari, T. Pervez, F. K. Al-Jahwar; Synthesis and Evaluation of Self-Healing Polyvinyl Alcohol-Tannic Acid Membranes for Skin Bio-Applications, *Journal of Applied Polymer Science*, Wiley (Published Nov 02, 2024)

BOOK CHAPTERS (02 Book Chapters)

1. **I.A. Channa**, A Distler, C.J Brabec, H.-J Egelhaaf, Solution-coated barriers for organic electronics Chapter in *Organic Flexible Electronics: Fundamentals, Devices, and Applications*, 249 (Publisher Woodhead Publisher, Elsevier, 2020) Book Chapter
2. M. Hassan, S. D. Ahmed, A. Ansar, **I.A. Channa**, Film Thickness and its influence Chapter 02 in Book “Thin Films and Coatings: Engineering Applications (Under publication by Springer Nature) Book Chapter

EDITORSHIP / EDITORIAL EXPERIENCE

2023 – 2024 Book Editor

Thin Film and Coatings: Engineering Applications, Publisher: Springer Nature, Singapore.

[Call for Chapters: Thin Films, Coatings | Springer Nature \(In Production\)](#)

COURSES TAUGHT TO PHD/M.ENGG./MS/B.ENGG/BS STUDENTS SINCE 2008

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|--|---|
| <ul style="list-style-type: none"> ▪ <i>Physical Metallurgy</i> ▪ <i>Vacuum Metallurgy</i> ▪ <i>Foundry Engineering and Practice</i> ▪ <i>Inspection and Testing of Materials</i> ▪ <i>Metallurgy of Welding</i> ▪ <i>Metallurgical Plants and Quality Control</i> ▪ <i>Heat Treatment of Materials</i> ▪ <i>Phase Transformation in Solids</i> ▪ <i>Modern Composite Materials</i> | <ul style="list-style-type: none"> ▪ <i>Thin Film Technology</i> ▪ <i>Research Methodology</i> ▪ <i>Thin Films</i> ▪ <i>Renewable Energy Materials</i> ▪ <i>Advanced Materials Characterization</i> ▪ <i>Polymeric Materials</i> ▪ <i>Coating Technology</i> ▪ <i>Industrial Materials Analysis</i> ▪ <i>Engineering Materials</i> |
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PhD SUPERVISION and Co-SUPERVISION

1. Mr. Abdul Ghafar Shaikh (Lecturer, Mechanical Engineering, NEDUET, Karachi) Title: Multifunctional nanostructured Thin Films for Enhanced Solar Energy Harvesting Applications (In process)
2. Mr. Muddasir (Lecturer, Materials Engineering, NEDUET, Karachi), Title: Development of flexible copper metalloid reinforced polymer matrix composite for renewable energy applications (In process)

3. Mr. Tariq Jamal (Associate Professor, National textile University Karachi Campus) Title: Development of oleophilic / hydrophobic adsorbents using lignocellulose and polymer based industrial waste for adsorption of water pollutants
4. Abdul Qadir Chandio (Lecturer, Metallurgy and Materials Engineering, DUET, Karachi) Title: Design and development of new products from plastic and textile waste.
5. Jaweria Ashfaq (Research Associate at Thin Film Lab, Department of Metallurgical Engineering, NEDUET, Karachi) title: Enhancement of life and performance of biodegradable packaging films based on papaya and gelatin.

M.Phil/MS SUPERVISION

1. Master Mini Thesis “Coating Barriers on organic electronics (Mini Project at FAU Erlangen, Germany) **(Completed in 2018)**
2. Master Thesis (Mutiba Hasin) “Synthesis and Characterization of Graphene oxide-based nanocomposites for packaging applications **(Completed in 2021)**
3. Master Thesis (Muzaffar Chandio) “Development and characterization of PVB/boron nitride films for gas barrier applications” **(Completed in 2021)**
4. Master Thesis (Abdul Karim Abro) “Synthesis of ZnO (zinc oxide) nano-particles for ultra-violet barrier coatings” **(Completed in 2021)**
5. Master Thesis (Jaweria Ashfaq) “Development of Edible and Biodegradable packaging films” (Completed in 2021)
6. Master Thesis (Mehwish Akhtar) “Development of Encapsulating materials for packaging opto-electronics” **(Completed in 2021)**
7. Master Thesis (Zubair Anwer) “Strengthening of PVB films by incorporation of egg shell powder” **(Completed in 2022)**
8. Master Thesis (Iqra Hamid) “Development of graphene-based nano-composite coatings for moisture barrier applications” **(Completed in 2022)**
9. Master Thesis “Abdul Aleem” To study the effects of coconut husk filler on physiochemical behavior of waste HDPE” **(Completed in 2022)**
10. Master Thesis “Ghulam Mustafa” Application of nano-clay in smart textile industry” **(Completed in 2022)**
11. Master Thesis (Maria Wasti) “Development and characterization of smart and intelligent biodegradable packaging films for the sustainable environment” **(Completed in 2023)**
12. Master Thesis (Zameen Sohail) “Development and characterization of PVA based nano-coatings for the Tissue Engineering applications” **(Completed in 2023)**
13. Master Thesis (Tooba Baig) “Development of antibacterial thin films for the packaging applications” **(Completed in 2023)**
14. Master Thesis (Mehwish Fatima) “Design and Development of Water Treatment Prototype for the use in Emergency situations” **(Completed in 2023)**
15. Master Thesis (Jamshed Hussain) “Development and characterization of nanocomposites for their applications in superabsorbent polymers” **(Completed in 2023)**
16. Master Thesis (Muniza) “Designing of electro spun membranes for the water filtration applications **(Completed in 2024)**
17. Master Thesis (Muzammil Jalil) “Post-consumer waste valorization for the development of asymmetric thin film nano-composites” **(Completed in 2024)**
18. Master Thesis (Muhammad Sameer Khan) “To develop a UV blocking as well as anti-reflecting coating for the engineering applications” **(Completed in 2024)**
19. Master Thesis (Shahrukh Shaikh) “Designing of superhydrophobic and anti-dust coatings for the solar cell applications” **In progress**
20. Master Thesis (Ayesha Malik) “Use of promethazine and linagliptin for solar cell applications” **In Progress**
21. Master Thesis (Maliha Jabeen) “Effect of eggplant peel mediated nanoparticles on the techno-functional properties of starch/PVA composite film” **In Progress**
22. Master Thesis (Muhammad Irfan Khan) “Enhancement of lifespan and performance of PVA based packaging films by incorporation of nanoparticles” **In Progress**
23. Master Thesis (Syed Mohsin Abbas) “Improving mechanical strength of biodegradable packaging films by the

application of glass flakes” **In Progress**

24. **Master thesis (Areeba**
25. Master Thesis (Ayman Noor) “Development of antibacterial films for food packaging” **In Progress**
26. Master Thesis (Zulifqar Ali) “Improving the mechanical strength of packaging films via glass flakes” **In Progress**
27. Master Thesis (Hitesh Kumar) “Synthesis of composite edible coatings: Towards sustainable food packaging alternatives” **In progress**

AWARDS, FUNDING, GRANTS, HONORARIUM & SCHOLARSHIPS

<u>2025</u>	Type of Grant: Grant Amount	Sultan Qaboos University Research Grant 55,000 Omani Riyal April, 2025 to March 2028
<u>2024</u>	Type of Grant: Grant Amount: Event:	DAAD’s re-invitation program for postdoc research work 3.6 million in Pakistan Rupees April, 2024 to August, 2024) at Erlangen, Germany
	Type of Grant: Grant Amount: Event:	Research Grant Funded by SHEC 3.4 million in Pakistan Rupees Project: Antibacterial nano-films for the food packaging applications
	Type of Grant: Grant Amount: Event:	Research Grant Funded by Pakistan Science Foundation 4.4 million in Pakistan Rupees Development of Anti-dust, superhydrophobic coatings for the enhancement of life, stability and performance of already installed solar panels
	Type of Honorarium: Honorarium Amount:	The Best Researcher Award for the Year 2022 500 USD
	Funded by:	NED Alumni Association of Southern California (NEDAASC), USA
	Type of Grant: Honorarium Amount: Project	Ph.D. Supervision Research Grant 1.0 million in Pakistan Rupees Multifunctional nanostructured Thin Films for Enhanced Solar Energy Harvesting Applications
	Funded by:	NED University of Engineering and Technology, Karachi
<u>2023</u>	Type of Grant: Grant Amount: Event: Funded by:	Mobility Grant for Islamabad as Invited Speaker 0.1 million in Pakistan Rupees International Symposium for Advanced Materials at Islamabad (March 2023)
	Type of Grant: Honorarium Amount: Funded by:	Research Grant Funded by SHEC 4.997 million in Pakistan Rupees Project: Development of Smart and intelligent food packaging sensor
	Type of Grant: Honorarium Amount: Project Funded by:	Ph.D supervision Research Grant 0.5 million in Pakistan Rupees Development of flexible copper metalloid reinforced polymer matrix composite for renewable energy applications NED University of Engineering and Technology, Karachi

2022

Type of Award: Best Published Research Award – 2022
Honorarium Amount: 500 USD
Funded by: NED Alumni Association of Southern California (NEDAASC), USA

Type of Grant: Research Grant for FYDP
Grant Amount: 0.112 million in Pakistan Rupees
Project: Development of self-healing and superhydrophobic nano-coatings
Funding by: NED Alumni Association of Southern California (NEDAASC), USA

Type of Grant: HEC NRP
Grant Amount: 6.7 million in Pakistan Rupee
Funded by: HEC Pakistan
Project: Development of biomedical implants and coatings

Type of Honorarium: Financial Reward on Research Publication
Honorarium Amount: 1.0 million in Pakistani Rupees
Funded by: NED University of Engineering & Technology, Karachi, Pakistan

2021

Type of Grant: NED SEED Funding / ISP Funding
Financial Reward: 1.0 million in Pakistan Rupees
Funded by: NED University of Engineering & Technology, Karachi, Pakistan

Type of Grant: Grant
Amount: Project: Research Grant for FYDP
0.1 million in Pakistan Rupees
Development of Edible and biodegradable packaging films
Funding by: NED Alumni Association of Southern California (NEDAASC), USA

2014

Type of Sponsorship
Grant Amount: Project: Ph.D. Research Funding
14.6 million in Pakistan Rupees
Development of Thin Film Encapsulation for Opto-electronics
Funding by: DAAD, Germany

INVITED SPEECHES

- Keynote speaker: International Symposium on Advanced Material, Islamabad Pakistan, topic: Encapsulation of Organic Solar Cells from Liquid Pre-Cursors (2-3 October 2023)
- Invited Speaker: 2nd International Conference on Biomaterials, Tissue Engineering and Regenerative Medicines, Islamabad, Pakistan, topic: Development of Biodegradable as well as Edible Coatings from Papaya for the Packaging of Food” (15-17 March, 2021)
- Invited Speaker: Workshop on Advancement in Materials Science and Engineering, organized by Dawood University of Engineering and technology, Karachi, Pakistan (03 February 2022)
- Invited Speaker: A Seminar on Aspects of Metallurgy and Materials in Contemporary Industries, Organized by Dawood University of Engineering and Technology, Karachi Pakistan (30 September 2021)
- Invited Speaker: Global Metallurgy, organized by Metallurgical Engineers Society, NED University of Engineering and Technology, Karachi, Pakistan (03 October 2023)
- Invited Speaker: A Seminar on Career Opportunities for Engineers, organized by Metallurgical Engineers Society (MES), NED University of Engineering and Technology, Karachi, Pakistan (29 September 2015)
- Speaker: Quality control in Metallurgical Industries, organized by Metallurgical Engineers Society (MES), NED

University of Engineering and Technology, Karachi, Pakistan (18 September 2012)

- Speaker: Global Metallurgy, Organized by Metallurgical Engineers Society (MES), NED University of Engineering and Technology, Karachi, Pakistan (17 March 2012)
- Speaker: Consortium of commercial manufacturing and materials engineering, by Metallurgical Engineers Society (MES), NED University of Engineering and Technology, Karachi, Pakistan (28 December 2011)

SCIENTIFIC, TECHNICAL AND ADMINSTRATIVE COMMITTEES

- Industrial Advisory Board, DUET, Karachi (2021-2022)
- Industrial Advisory Board, MYD, NEDUET
- Member, Examination Review Committee, MYD, NEDUET (2021 – date)
- Member, Curriculum Review Committee, MYD, NEDUET (2021 – date)
- Member, Outcome Based Education (OBE) Team, MYD, NEDUET (2021 – date)
- Member, Steering Committee for FYDP, MYD (2024 – date)
- Member, Health and Safety committee MYD (2022 – date)
- Organizing Member 1st ICAMSEE (International Conference) 2021, NEDUET
- Organizing Member 1st QEC conference (International conference) 2022, NEDUET
- Member, Organizing Committee, 4th International Research Conference on AMPSE 2024, NEDUET

OTHER RESEARCH ACTIVITIES

Regular Reviewer

Sustainability, Coatings, Molecules, Applied Science, Applied polymer Science, Environmental Science and Pollution Research and many more.

Session Chair/Co-Chair

- *International Symposium on Advanced Materials (ISAM) 2023 organized by KRL, Islamabad*
- *1st International Conference on Advanced Materials and Environmental Engineering (ICAMSEE) 2021 organized by NEDUET, Karachi*

ADJUNCT/VISITING FACULTY EXPERIENCE SINCE 2010

- Department of Chemistry, *NED University of Engineering & Technology, Karachi (For PhD and MS Industrial Chemistry)*
- Department of Industrial and Manufacturing, *NED University of Engineering & Technology, Karachi (For BE Courses)*
- Department of Materials Engineering, *NEDUET Karachi (For PhD, ME and BE Courses in Materials Science)*
- Department of Dental Science, Dr. Ishratul Ibad Khan Dental College, *DUHS, Karachi. (For MS Research & Specialized Courses)*

HONORARY DUTIES PERFORMED

Conference Co-Ordinator “1st International Conference on Advance Materials and Environmental Engineering (ICAMSEE 2021), organized by Department of Metallurgical Engineering, NED University of Engineering and Technology, Karachi, Pakistan (2021)

Judge (National Level) (Category: Materials Science and Engineering): 1st National Idea Bank (NIB) organized by Aspire Pakistan (2023)

Judge (Poster competition) World Food Day: Organized by Department of Food Science and Technology, University of Karachi (2023)

Judge (Category: Chemistry) Researchathon: Organized by Agha Khan Education Service, Pakistan (2024)

Google Scholar Citation overview



Dr.-Ing. Iftikhar Ahmed Channa



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References can be furnished upon request.

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