DR. UZAIR MAJEED

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Research Profiles:
ResearchGate: https://www.researchgate.net/profile/Uzair-Majeed
Google Scholar:
https://scholar.google.com/citations?user=UxBeKcoAAAAJ&hl=en
Professional Profile:
LinkedIn: https://www.linkedin.com/in/dr-uzair-majeed-10097823/

EDUCATION:

PhD (Science)	2016	University Tun Hussein Onn Malaysia
MSc. Physics (Electronics)	2007	Federal Urdu University of Arts Science and Technology
BSc. (Maths, Physics, Geography)	2004	University of Punjab

ONLINE REFRESHER COURSE CERTIFICATES:

Title	Awarding Institute	Relevant Skills
Teaching Science at University	University of Zurich https://coursera.org/verify/EVPJRYBMLT93	Teaching science in higher education
Nanotechnology: A Maker's Course	Duke University https://coursera.org/verify/BU2BP5PLULVB	Semiconductor fabrication and characterization
Exploring Renewable Energy Schemes	University of Pennsylvania https://coursera.org/verif y/XC9DW53PPHG9	Solar, wind and hydrothermal energy studies
Introduction to Household Water Treatment and Safe Storage	École Polytechnique Fédérale de Lausanne https://coursera.org/verif y/ZPRHFBDEW58R	Safe water drinking practice

INTERNATIONAL VISITS:

Country	**City**	**Year**	**Duration**	**Purpose**
Germany	ULM	2009	07 days	Sales training from Zwick/Rowell industry
Qatar	Doha	2010	03 days	Sales training from Zwick/Rowell industry
China	Beijing	2010	07 days	Visit and sightseeing
Malaysia	Batu Pahat	2011	05 years	PhD in UTHM
Saudi Arab	Makkah, Madinah, Riyadh	2024	20 days	Umrah and family visit

WORK EXPERIENCE:

Feb 2017 – To Date
Assistant Professor, Department of Physics
NED University of Engineering and Technology Karachi, Pakistan

Teaching experience:

- Teaching Physics courses at undergraduate and graduate level: Applied Physics, Surface Sciences, Mathematical Physics I & II, Heat and Thermodynamics, Statistical Mechanics, Quantum Mechanics and Classical Mechanics
- Designing and conducting and demonstrations of laboratory practicals.
- Paper setting, exams invigilation
- Visiting faculty at Thar Institute of Engineering Science and Technology (TIEST), A Constituent College of NED University of Engineering & Technology at Mithi**,** Tharparkar.
- Online teaching and assessment through Google Classroom during COVID-19 pandemic.
- Implementation of Outcome based education (OBE) system.

Research experience:

- Supervision of (10) final year projects as main supervisor
- Supervision of (14) master's thesis as main supervisor *(Details of research titles are available below)*
- Evaluator of final year projects and master's thesis in Physics department, NEDUET.
- Reviewer in research journals:
    - Sigma Journal of Engineering and Natural Sciences, Yildiz Technical University, Esenler, Istanbul.
    - The Sciencetech - Qurtuba University, Peshawar, Pakistan

Administrative experience:

- Program team (PT) member for Self-Assessment Report (SAR), MS Physics program on 22nd April 2021 for HEC visit.
- Assessment of PhD entrance test exam scripts in senate hall on 23rd April 2021.
- Member of printing committee and Head of registration committee in First International Conference on Applied Physics and Engineering (ICAPE)2021 organized by Department of Physics, NED University of Engineering and Technology, Karachi.

Dec 2011 – Oct 2016
Graduate Research Assistant
Faculty of Applied Sciences and Technology
Universiti Tun Hussein Onn Malaysia

Main responsibilities included performing studies as related to PhD research project, supervision of undergraduate students, teaching assistance and lab demonstration.

Jun 2009 – Nov2011
Sales and Maintenance Officer
Techno World Instrument Service Karachi, Pakistan

Main responsibilities included organization of sales visits, demonstration / presentation of products, maintaining accurate inquiries records and reviewing sales performance, tune and troubleshoot physical testing equipments, attending trade exhibitions, conferences and meetings.

Mar 2008 – Feb2009
Production Supervisor (Molding Department)
Otsuka Pakistan Limited Main responsibilities included planning and organizing staff shift rotas and tasks, monitoring quality control, reporting plant or machinery breakdowns, stock control.

PhD RESEARCH SYNOPSIS:

Title: <u>FABRICATION AND CHARACTERIZATION OF SILICON NITRIDE THIN FILM PLANAR WAVEGUIDES PRODUCED BY RF MAGNTERON SPUTTERING TECHNIQUE</u>

My project involved the study of silicon nitride planar waveguides for optical waveguides applications. These optical waveguides could be used for biosensing applications alongwith an optical setup. The main idea was to develop multilayer planar structure which consists of silicon oxide/ silicon nitride and silicon oxide layer also called oxide/nitride/oxide (ONO) structure at low room temperatures and using simple and safe process. During this project I involved with several wafer cleaning procedures such as RCA cleaning, Piranha cleaning and ultrasonic cleaning using organic solvents. I worked in class 100 clean room and used fume hoods and accessories related to area such as organic solvents, strong acids, wafer cleaving kits and consumables. I also had access to deposition equipments named high temperature oxidation furnace and RF magnetron sputtering equipment. My sample characterization employed X-ray diffraction, Field emission scanning electron microscopy (FE-SEM), Energy dispersive x-ray (EDX) spectroscopy, Fourier transform infra-red (FTIR) spectroscopy, Atomic force microscopy (AFM), Surface profiler, Spectral reflectance, Ultraviolet visible (UV-VIS) spectrophotometer. My characterization also involved the spectroscopic ellipsometry and prism coupling technique which we got from Hungary and USA respectively.

OTHER RESEARCH PROJECTS DURING MY STUDY IN UNIVERSITY TUN HUSSAIN ONN MALAYSIA:

DRY PHASE DETECTION OF ULTRA THIN MULTILAYER POLY ELECTROLYTE FILMS USING SPECTRAL REFLECTANCE TECHNIQUE

This project involved surface modification of silicon nitride thin films with polyelectrolyte multilayer films for immunoassay preparation in biosensing application. I had a chance to work with Prof. Alexei Nabok, Sheffield Hallam University during this project. The main idea was to utilize a thin film analyzer as a detector for ultrathin polyelectrolyte films and further to detect the immune reaction, that is, antigen antibody reaction. During this project I was involved in preparation of substrates, calibration and operation of Filmetrics thin film analyzer, preparation of several concentrations of polyelectrolyte self-assembled films named as Poly allylamine hydrochloride (PAH) and Poly styrenesulfonate (PSS), Proteins named as Bovine serum albumin (BSA), Protein A and G, Amyloid beta 1-42 and its antibodies.

MASTERS RESEARCH PROJECTS: (Main Supervisor)

No	Student Name	Year	Research Title
1	Hasnain Ahmed	2023	Development of impedance tube and the study of sound absorption properties of natural fibers for noise reduction
2	Muhammad Umer	2023	Analysis of electrical, structural and optical properties of magnetron sputtered silicon nitride thin films at various sputtering pressures.
3	Abdul Sajid	2022	Preparation and characterization of Activated Carbon produced by Eucalyptus tree.
4	Qiraat Fatima	2022	Detection of trace elements in commercially available aluminum foil using laser induced breakdown spectroscopy technique.
5	Maham Ajmal	2021	Estimating the decolorization power of activated carbon prepared by parts of Eucalyptus tree.
6	Momina Tariq	2021	Development of a low-cost paint thickness tester for automotive application.
7	Waqas Asad	2020	Detection of Health Hazardous Contaminants in using laser induced breakdown spectroscopy.
8	Shazia Shahnaz	2020	Removal of Heavy Metal Ions using the Activated Carbon produced by Waste Material.

9	Dure Sameen	2020	Optical Characterization of Magnetron sputtered silicon nitride thin films.
10	Hafiza Haya	2020	Characterization of SiO_2 thin films produced by RF Magnetron Sputtering Technique.
11	Muhammad Wasib	2020	Surface Characterization of Silicon Nitride Thin Films produced by RF Magnetron Sputtering Technique
12	Fasahat Batool	2019	The impact of divalent metals (Cu,Zn,Co) substitution on structural & Physical properties aluminum substituted Mg nano Ferrites
13	Sehrish Inam	2018	Synthesis and characterization of transition metal doped spinal ferrites.
14	Laraib Abdul Latif	2018	Characterization of coconut coir for sound absorption properties.

UNDERGRADUATE FINAL YEAR PROJECTS: (Main Supervisor)

No	Student Name	Year	Research Title
1	Muhammad Haris, Asma Ali, Amna Ahmed, Duaa-e-Zahra	2023	Fabrication and comparative study of acoustical properties of natural fibers.
2	Syed Moosa Al Kazim Naqvi, Noor Muhammad, Shahrukh Khan, Umer Saeed	2021	Acoustic levitation of solid particles.
3	Nimrah Jabin, Muhammad Sabih Arif, Noman Bashir, Maira Memon	2020	Fabrication and characterization of sound absorption panels using coconut coir and wood dust.
4	Arsal Farooq, Mahroo Babar, Muhammad Ammar, Muzna Saeed	2020	Treatment of textile waste water using activated carbon produced by lignocellulosic biomass.
5	Iqra Rabbi, Abdul Qadir, Irina Saeed, Abdul Wahab	2020	Characterization of tea waste based activated carbon for dye removal applications.
6	Zeeshan Jabbar, Syeda Ifrah Hamd, Syeda Dua, Maha Yousuf	2020	Development of a self-cleaning mechanism to solve dust problem in solar panels.
7	Javeria Farooq, Hamid Ali Shah	2020	Designing an automated water management system: A step towards smart home.
8	Rabiya Shahid, Maryam Waseem, Marjan Irfnullah,, Maryam Yahya	2019	Removal of heavy metal ions from aqueous samples using activated carbon technique.
9	Fareeha Jalil, Maham Ajmal, Abeera Marium, Syeda Yusra Fatima	2019	Study of the adsorption properties of activated carbon produced by tea, potato peel and peanut shell wastes.
10	Saher Aman,Haya Mohani, Sumayya Siddiqui, Shiza Hasan	2018	Modification of Hansen solubility parameters in ultrasonic exfoliation technique to achieve the optimized graphene dispersion

RESEARCH PUBLICATIONS:

I Tariq, S Camren, and **U Majeed**, (2024) Effects of Ionizing Radiations on the Resistances of Locally Available Brand of Ceramic Resistors. The Sciencetech, 5(2), pp.75-84.

U Majeed, I Tariq, M Wasib, MK Mustafa. (2023) Surface study of RF magnetron sputtered silicon nitride thin films. Journal of Optoelectronic and Biomedical Materials. Volume 15, Issue 2, 55-64

U Majeed, I Tariq, S Aman, S Siddiqui, H Mohani. (2023) Study of the Optimization of Hansen Solubility Parameters in the Ultrasonic Exfoliation Technique to Achieve Stable Graphene Dispersions. The Sciencetech. Volume 3, Issue 1, 99-106

S N Shah, S R Ali, S Qaseem, Y Bibi, **U Majeed**, S M Raza. (2022) Systematic Variations in Structural and Photoluminescence Properties Produced in Zn Oxide Nanostructures by Cu (0-5) % Substitution. Jornal of nanoscope. Volume 3, Issue 1, 1-20

I Ahmad, Y Iqbal, M K Mustafa, J Wang, C Wang, **U Majeed**, P Muhammad, F Rehman. (2020). Synthesis and growth mechanism of ZnO nanospheres by hydrothermal process and their anticancer effect against glioblastoma multiforme. Biomedical Letters, 6(1) 8-12

M K Mustafa, **U Majeed** and Y Iqbal. (2018). Effect on silicon nitride thin films properties at various powers of RF magnetron sputtering. International Journal of Engineering & Technology, 7 (4.30) 39-41

Mustafa, M. K., **Majeed, U**., & Nayan, N. (2016). Characterization of silicon nitride waveguide produced by rf sputtering technique. ARPN Journal of Engineering and Applied Sciences, Asian Research Publishing Network, 8, 9694, ISSN:1819-6608

Majeed, U., Mustafa, M. K., & Nayan, N. (2015). Effect on silicon nitride thin films properties at various pressure of RF magnetron sputtering. Malaysian Journal of Fundamental and Applied Sciences, 11(2).

CONFERENCE PRESENTATIONS:

S Inam, G Mustafa, **U Majeed** and M Khalid (2021). Effect of Transition Metals (M = Cu, Zn, Co) Substitution on Structural & Electrical Properties in Nickel Magnesium Ferrites ($M_xNi_{(0.5-X)}Mg_{(1-2x)}Fe_2O_4$) Nano Particles. International Conference on Applied Physics and Engineering (ICAPE 2021). NED University of Engineering and Technology, Karachi, Pakistan.

F Batool, G Mustafa, **U Majeed**, J K Khan, M Khalid. The Impact of Divalent Metals Substitution on Structural & Physical Properties of Aluminum Substituted Magnesium Nano Ferrites Syeda International Conference on Applied Physics and Engineering (ICAPE 2021). NED University of Engineering and Technology, Karachi, Pakistan

U Majeed, MK Mustafa, Y Iqbal, S Aman, H Mohani, S Siddiqui, S Hasan (2018). Modification of Hansen solubility parameters in ultrasonic exfoliation technique to achieve the optimized graphene dispersion. International Conference on Nanoscience and Nanotechnology (ICONN 2018). NUST Main Campus, Islamabad. Pakistan

MK Mustafa, Y Iqbal, **U Majeed**, MZ Sahdan (2017). Effect of precursor's concentration on structure and morphology of ZnO nanorods synthesized through hydrothermal method on gold surface. AIP Conference Proceedings 1788 (1), 030120

Mustafa, M. K., **Majeed, U.**, & Nayan, N. (2016). Influence of sputtering parameters on the growth rate of silicon nitride thin films prepared by RF magnetron sputtering. Second International Conference on Materials Science and Technology (ICMST 2016) Kerala, India.

Mustafa, M. K., **Majeed, U.**, & Nayan, N. (2014). Influence of target-to-substrate spacing on the RF magnetron sputtered silicon dioxide thin films. International Conference of Physics (ICP 2014), Yogyakarta, Indonesia.

Majeed, U., Mustafa, M. K., & Nayan, N. (2013). Dry phase detection of ultra-thin multilayer poly electrolyte films using spectral reflectance technique. Seminar Kebangsaan Aplikasi Sains & Matematik (SKASM 2013), Batu Pahat, Malaysia.

SEMINARS ATTENDED:

"The Twelfth Regional Annual Fundamental Science Symposium (12 RAFSS) 2014 on 8th – 10th September 2014 at Persada Johor International Convention Center, Johor,Malaysia.

"Research Seminar Lembangan Muar River" on 6th September 2014 at Hotel Classic, Muar, Johor, Malaysia.

"Seminar Kebangsaan Aplikasi Sains Dan Matematik (SKASM) 2013" on 29 October 2013 at University Tun Hussein Onn Malaysia.

"Postgraduate 3 Minutes Thesis (PG 3MT) on 15th July 2013 at University Tun Hussein Onn Malaysia.

"Research Sharing Seminar" on 28th February 2013 at University Tun Hussein Onn Malaysia.

"Thesis Writing for Postgraduate Students" on January 30th,2013 at University Tun Hussein Onn Malaysia.

"Seminar on Mendeley and Sharing Experience" on 26th September 2012 at University Tun Hussein Onn Malaysia. "The Research Journey" on 17th July 2012 at University Tun Hussein Onn Malaysia.

POSTER PRESENTATIONS:

Research and Innovation Festival 2014 on 2nd – 3 rd November 2014 at University Tun Hussein Onn Malaysia. Inaugural MiNT-SRC Research Seminar (MRS) 2013 on 2nd July **2013** at (MiNTSRC), UTHM.

TRAININGS AND COURSES:

Training Session on "Effective PhD Supervision" on 7th to 14th October **2024** at NED University of Engineering and Technology Karachi

Training Session on "How to Write Effective Project Proposals" on 14th November **2022** at NED University of Engineering and Technology Karachi

Training Session on "OBE Management Information System (MIS) Software" on 4th August **2022** at Mechanical Engineering Department NED University of Engineering and Technology Karachi

Training Session on "New Outcome-based education (OBE) Framework" on 4th August **2022** at Mechanical Engineering Department NED University of Engineering and Technology Karachi

"Nano Materials and Semiconductor Devices" in 44th International Nathia-gali Summer College (INSC 2019) held from 15 - 20 July **2019** at National Center for Physics (NCP) Islamabad.

Material Analysis Seminar: X-Ray Photoelectron Spectroscopy (XPS) seminar on 21st – 22nd August **2014** at MIMOS Bhd. Kuala Lumpur, Malaysia

Advanced Microscopy and Application on 23rd May **2013** by Hi-Tech Instruments Pte Ltd, Singapore

Principle and Operation of JEOL Field Emission Scanning Microscope (FESEM) on 27th March **2013** by JEOL Asia Pte Ltd.

Short Course in Computer Interfacing Using EZi Comint USB Interface Card and Java Programming" on 18th – 19th September **2012** by Physics Department, University Technology Malaysia, UTM.

Annual meeting of Zwick sales partners **2010**, Ramada Plaza, Doha, Qatar

TestXpo **2009** International Forum for Materials Testing at Zwick GmbH & Co.KG, ULM, Germany

AWARDS AND FELLOWSHIPS:

Appreciation Award as Head of Registration Committee in 1st International Conference on Applied Physics and Engineering held on 16 & 17 September 2021 at Department of Physics NED University of Engineering and Technology.

Bronze medal in Research and Innovation Festival (R&I Fest.) **2014** on 2nd – 3rd November 2014 at Universiti Tun Hussein Onn Malaysia

PROFESSIONAL MEMBERSHIP

Ordinary member of Malaysian Institute of Physics, Membership no: MIPM 1380

IT SKILLS:

- Hands on experience on windows and all necessary software installation.
- Hands on experience of software and hardware trouble shooting of desktop and laptops.
- Expertise in MS office (MS Word, MS Excel and MS PowerPoint).
- Expertise in Research related software: Origin, Sigmaplot, Endnote.
- Expertise in audio/video editing software: Audacity, Filmora, Camtasia.

TECHNICAL EXPERIENCE:

- Hands on experience of household minor electrical maintenance.
- Hands on experience of household minor mechanical maintenance.
- Hands on experience of overhauling of 2KVA gasoline generator.
- Hands on experience of maintenance of various home appliances.
- Hands on experience of minor maintenance of automotive two and four wheelers.

LANGUAGE SKILLS:

English, Urdu: Advanced
Malay: Basic

REFERENCES:

Prof. Dr. Mohd. Kamarulzaki Mustafa
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Faculty of Applied Sciences and Technology,
Universiti Tun Hussein Onn Malaysia.
Email: kamarulz@uthm.edu.my

Prof. Dr. Nafarizal Nayan
Faculty of Electronic & Electric Engineering,
Universiti Tun Hussein Onn Malaysia.
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