Contact Directory:

Contact Directory for School of Interdisciplinary Engineering and Sciences (SINES), National University of Sciences and Technology (NUST), H -12 Campus, Islamabad:

General Information

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SINES Faculty/ Staff Directory:

Syed Irtiza Ali Shah - Principal of SINES

Publications:

Experimental investigation and analysis of proposed hybrid vertical axis wind turbine design (June 19, 2023)

- Co-authors: Muhammad Ahmad, Aamer Shahzad, Syed Irteza Ali Shah

A Novel Framework for Qualification of a Composite-Based Main Landing Gear Strut of a Lightweight Aircraft (March 11, 2023)

- Co-authors: Muhammad Ayaz Ahmad, Syed Irteza Ali Shah, Sabih Ahmad Khan, Haris Ali Khan, Taimur Ali Shams

Design optimization of Double-Darrieus hybrid vertical axis wind turbine (June 15, 2022)

- Co-authors: Muhammad Ahmad, Aamer Shahzad, M Farooq Bin Akram, Fareed Ahmad, Syed Irtiza Ali Shah

Selection Methodology of Composite Material for Retractable Main Landing Gear Strut of a Lightweight Aircraft (June 03, 2022)

- Co-authors: Muhammad Ayaz Ahmad, Hamza Rafiq, Syed Irtiza Ali Shah, Sabih Ahmad Khan, Syed Tauqeer ul Islam Rizvi, Taimur Ali Shams

A novel solution methodology for longitudinal flight characterization of a Flying-Wing Micro Aerial Vehicle (April 27, 2022)

- Co-authors: Taimur Ali Shams, Syed Irtiza Ali Shah, Aamer Shahzad, Muzaffar Habib, Farhat Asim, Mohtashim Mansoor

Numerical estimation of longitudinal damping derivatives of a flying wing micro aerial vehicle (April 12, 2022)

- Co-authors: Taimur Ali Shams, Syed Irtiza Ali Shah, Aamer Shahzad, Kashif Mehmood

An Intelligent Hybrid Scheme for Identification of Faults in Industrial Ball Screw Linear Motion Systems (March 05, 2021)

- Co-authors: Naveed Riza, Syed Irteza Ali Shah, Faisal Rehman, Muhammad Jawad Khan

On the meshfree particle methods for fluid-structure interaction problems (March 01, 2021)

- Co-authors: Farrukh Mazhar, Ali Javed, Jing Tang Xing, Aamer Shahzad, Mohtashim Mansoor, Adnan Maqsood, Syed Irteza Ali Shah, Kamran Asim

Estimation of Stability Parameters for Wide Body Aircraft Using Computational Techniques (February 26, 2021)

- Co-authors: Muhammad Ahmad, Zukhruf Liaqat Hussain, Syed Irteza Ali Shah, Taimur Ali Shams

A semi-analytical approach for flutter analysis of a high-aspect-ratio wing (February 01, 2021)

- Co-authors: Rana Fahad Latif, Muhammad Khizer Ali Khan, Ali Javed, Syed Irteza Ali Shah, Syed Tauqeer Ul Islam Rizvi

Comprehensive design of an oleo-pneumatic nose landing gear strut (December 13, 2020)

- Co-authors: Muhammad Ayaz Ahmad, Syed Irteza Ali Shah, Taimur Ali Shams, Ali Javed, Syed Tauqeer ul Islam Rizvi

Syed Irtiza Ali Shah - Principal of SINES

Publications:

A Novel 2-D Current Signal-Based Residual Learning With Optimized Softmax to Identify Faults in Ball Screw Actuators (July 02, 2020)

- Co-authors: Naveed Riaz, Faisal Rehman, Syed Omer Gilani, Emad Udin

A review of principles of MEMS pressure sensing with its aerospace applications (September 16, 2019)

- Co-authors: Yaser Javed, Mohtashim Mansoor

A Robust Scheme of Vertebrae Segmentation for Medical Diagnosis (August 20, 2019)

- Co-authors: Faisal Rehman, Naveed Riaz, Syed Omer Gilani

A region-based deep level set formulation for vertebral bone segmentation of osteoporotic fractures (April 22, 2019)

- Co-authors: Faisal Rehman, Naveed Riaz, Syed Omer Gilani, Faiza R.

Computational analysis of integrated Engine exhaust nozzle on a supersonic fighter aircraft (November 01, 2018)

- Co-authors: Muhammad Irsalan Arif, Jehanzeb Masud

Comparative flow field analysis of Boundary Layer Diverter Intake and Diverterless Supersonic Intake Configuration (July 01, 2018)

- Co-authors: Muhammad Irsalan Arif, Shuaib Salamat, Mudassir Ahmed, Faiz Qureshi

An appraisal of nodules detection techniques for lung cancer in CT images (March 01, 2018)

- Co-authors: Muhammad Zia ur Rehman, Muzzamil Javaid, Syed Omer Gilani, Mohsin Jamil, Shahid Ikramullah Butt

Integrated CLOS and PN guidance for increased effectiveness of surface to air missiles (June 01, 2017)

- Co-authors: Binte Fatima Tuz Zahra, Syed Tauqeer ul Islam Rizvi

Trajectory optimisation for a rocket-assisted hypersonic boost-glide vehicle (March 27, 2017)

- Co-authors: Syed Tauqeer Ul Islam, He LinShu, Xu Dajun

A novel approach to CAD system for the detection of lung nodules in CT images (October 01, 2016)

- Co-authors: Muzzamil Javaid, Muhammad Zia-ur-Rehman, Syed Omer Gilani

Monocular Vision-based Signer-Independent Pakistani Sign Language Recognition System using Supervised Learning (July 01, 2016)

- Co-authors: Habib Ahmed, Syed Omer Gilani, Mohsin Jamil, Yasar Ayaz

An Appraisal of the Advancement of Emerging Technologies in Hearing Aids (July 01, 2016)

- Co-authors: Muhammad Zia-ur-Rehman, Syed Omer Gilani, Mohsin Jamil, Faisal Amin

Adaptive thresholding technique for segmentation and juxtapleural nodules inclusion in lung segments (May 01, 2016)

- Co-authors: Muhammad Zia-ur-Rehman, Syed Omer Gilani, Irfanullah, Shahid Ikramullah Butt

Audio signal's test in designing a cost-effective hearing aid device using a microcontroller (March 20, 2016)

- Co-authors: Muhammad Zia-ur-Rehman, Muzzamil Javaid, Syed Omer Gilani, Umar Ansari

Selection of Unmanned Aerial System (UAS) for Disaster Relief Operations: A Comparison (January 01, 2015)

- Co-authors: Umair Iqbal, Mohsin Jamil, Syed Omer Gillani, Yasar Ayaz

Project Director NCDC: Hammad Mehmood Cheema

- **School of Interdisciplinary Engineering & Sciences (SINES)**
- **Contact Info:** 5190855701

Academic Background:

- PhD in Electrical Engineering, Eindhoven University of Technology, May 01, 2005 - January 25, 2010

Honors and Awards:

- Best University Teacher Award: May 01, 2017
- Institute Level Best Researcher Award: December 13, 2020

Experience:

- Postdoc, King Abdullah University of Science & Technology, March 01, 2011 - August 01, 2013

Publications:

1. Beam Steerable Half Mode SIW Leaky-Wave Antenna Using FPMS (October 09, 2023) - Hammad M Cheema, Co-authors: Shahinshah Ali, Farhan A. Ghaffar
2. Segmented Radon Fourier Transform for Long-Time Coherent Radars (May 01, 2023) - Hammad M Cheema, Co-authors: Musadiq Hussain, Rehan Ahmed
3. Substrate Integrated Waveguide Antenna System for 5G In-Band Full Duplex Applications (October 10, 2021) - Hammad M Cheema, Co-authors: Masaud Shah, Qammer H. Abbasi
4. Ultra-wideband, wide angle, asymmetric transmission based chiral metasurface for C and X band applications (June 03, 2021) - Hammad M Cheema, Co-authors: Syed Hussain Ali Bokhari
5. Antenna-on-Chip: Design, Challenges, and Opportunities (June 01, 2021) - Hammad M Cheema, Co-authors: Fatima Khalid, Atif Shamim
6. A Bilayered, Broadband, Angularly Robust Chiral Metasurface for Asymmetric Transmission (January 01, 2021) - Hammad M Cheema, Co-authors: Syed Hussain Ali Bokhari
7. Broadband asymmetric transmission via angle-induced chirality enhancement in split ring resonators (August 12, 2020) - Hammad M Cheema, Co-authors: Syed Hussain Ali Bokhari
8. Quad-Band 3D Rectenna Array for Ambient RF Energy Harvesting (May 15, 2020) - Hammad M Cheema, Co-authors: Fatima Khalid, Warda Saeed, Nosherwan Shoaib, Muhammad Umer Khan
9. A divide-by-3 planar power divider with >30 dB isolation (May 01, 2020) - Hammad M Cheema, Co-authors: Amber Abdullah, M. Ayaz Zakir
10. A Dual-Band Zero-Index Metamaterial Superstrate for Concurrent Antenna Gain Enhancement at 2.4 and 3.5 GHz (March 10, 2020) - Hammad M Cheema, Co-authors: Zain Haider, Muhammad Umer Khan
11. A Wideband Tunable Power Divider for SWIPT Systems (January 31, 2020) - Hammad M Cheema, Co-authors: Sana Ilyas, Nosherwan Shoaib, Symeon Nikolaou
12. Graphene-ferrites interaction for enhanced EMI shielding effectiveness of hybrid polymer composites (January 06, 2020) - Hammad M Cheema, Co-authors: Ibrar Ahmed, Rahim Jan, Ahmad Nawaz Khan, Imtiaz Ahmad
13. EMI shielding properties of polymer blends with inclusion of graphene nano platelets (September 01, 2019) - Hammad M Cheema, Co-authors: Muhammad Fayzan Shakir, Ahmad Nawaz Khan, Ramsha Khan, Sofia Javed, Muhammad Aftab Akram
14. A W-Band EBG-Backed Double-Rhomboid Bowtie-Slot On-Chip Antenna (May 01, 2019) - Hammad M Cheema, Co-authors: Muhammad Saad Khan, Farooq Ahmad Tahir, Azat Meredov, Atif Shamim
15. Weakly coupled directional coupler with simultaneous wide bandwidth and high directivity (May 01, 2019) - Hammad M Cheema, Co-authors: M. Hammad Akhtar, M. Ayaz Zakir
16. A 5GHz Narrow-Beam Leaky-Wave Antenna Using Binomially Distributed Slot based Substrate Integrated Waveguide (September 01, 2018) - Hammad M Cheema, Co-authors: Memoona Farooq, Muhammad Umer Khan
17. RF Energy Harvesting for Ubiquitous, Zero Power Wireless Sensors (April 22, 2018) - Hammad M Cheema, Co-authors: Warda Saeed, Nosherwan Shoaib, Muhammad Umer Khan
18. A high-gain inkjet-printed UWB LPDA antenna on paper substrate (May 01, 2017) - Hammad M Cheema, Co-authors: Syed Muhammad Hamza, Farooq Ahmad Tahir
19. Disposable, Paper-Based, Inkjet-Printed Humidity and H2S Gas Sensor for Passive Sensing Applications (December 06, 2016) - Hammad M Cheema, Co-authors: Abdul Quddious, Shuai Yang, Munawar M. Khan, Farooq Ahmad Tahir, Atif Shamim, Khaled N. Salama

Project Director NCDC: Hammad Mehmood Cheema

Publications:

20. Effect of polyaniline on the dielectric and EMI shielding behaviors of styrene acrylonitrile (September 01, 2016) - Hammad M Cheema, Co-authors: Abdul Saboor, Ahmad Nawaz Khan, Imtiaz Ahmad

21. A Compact Uniplanar Antenna for Nine-Band LTEWWAN Operation in Tablet Computers (August 01, 2016) - Hammad M Cheema, Co-authors: Aqsa Ahmad, Farooq Ahmad Tahir

22. 3.56 bits/cm2 Compact Inkjet Printed and Application Specific Chipless RFID Tag (January 01, 2016) - Hammad M Cheema, Co-authors: Munawar Masood Khan, Farooq Ahmad Tahir, M. F. Farooqui, Atif Shamim

23. A Compact Kapton-based Inkjet Printed Multiband Antenna for Flexible Wireless Devices (April 20, 2015) - Hammad M Cheema, Co-authors: Sana Ahmed, Farooq Ahmad Tahir, Atif Shamim

24. A low-power 802.11 ad compatible 60-GHz phase-locked loop in 65-nm CMOS (March 01, 2015) - Hammad M Cheema, Co-authors: Muhammad Arsalan, Khaled N. Salama, Atif Shamim

HOD DEPARTMENT OF ENGINEERING: Mian Ilyas Ahmad

- **School of Interdisciplinary Engineering & Sciences (SINES)**
- **Contact Info:** 0518865745

Academic Background:

- PhD in Control Engineering, Imperial College London, October 28, 2007 - April 28, 2011

Honors and Awards:

- Certificate of Merit Cash Award for securing the third position in Third Year Electrical Engineering Annual Examination, April 15, 2005
- Imperial Volunteer Centre Award in recognition of contributions to the local community as an Imperial College Volunteer, October 20, 2010

Experience:

- Post-Doctoral Fellow, Max Planck Institute for Dynamics of Complex Technical Systems Magdeburg, January 01, 2013 - December 31, 2015

Publications:

1. Multivariate moment-matching for model order reduction of quadratic-bilinear systems using error bounds (December 12, 2022) - Mian Ilyas Ahmad, Co-authors: Muhammad Altaf Khattak, Lihong Feng, Peter Benner
2. Development of Model Reduction Framework for Continuous-Time Weighted and Limited-Interval Systems (June 14, 2022) - Mian Ilyas Ahmad, Co-authors: Sammana Batool, Muhammad Imran
3. Development of Frequency Weighted Model Order Reduction Techniques for Discrete-Time One-Dimensional and Two-Dimensional Linear Systems With Error Bounds (February 10, 2022) - Mian Ilyas Ahmad, Co-authors: Muhammad Imran
4. Accuracy Enhancing Model Reduction Technique for Weighted and Limited Interval Systems with Error Bound (January 08, 2022) - Mian Ilyas Ahmad, Co-authors: Sammana Batool, Muhammad Imran
5. Computational techniques for H2 optimal frequency-limited model order reduction of large-scale sparse linear systems (October 23, 2021) - Mian Ilyas Ahmad, Co-authors: Xin Du, Kife I. Bin Iqbal, M. Monir Uddin, A. Mostakin Fony, Md. Tanzim Hossain, Mohammad Sahadet Hossain
6. Development of model reduction technique for weighted and limited-intervals gramians for discrete-time systems via balanced structure with error bound (September 12, 2021) - Mian Ilyas Ahmad, Co-authors: Sammana Batool, Muhammad Imran
7. Frequency-weighted $\mathcal{H}2$-optimal model order reduction via oblique projection (June 24, 2021) - Mian Ilyas Ahmad, Co-authors: Umair Zulfiqar, Victor Sreeram, Xin Du
8. Frequency weighted H2-pseudo-optimal model order reduction (June 01, 2021) - Mian Ilyas Ahmad, Co-authors: Umair Zulfiqar, Victor Sreeram, Xin Du
9. Implicit Higher-Order Moment Matching Technique for Model Reduction of Quadratic-bilinear Systems (February 01, 2021) - Mian Ilyas Ahmad, Co-authors: Mian Muhammad Arsalan Asif, Peter Benner, Lihong Feng, Tatjana Stykel
10. Time- and frequency-limited H2-optimal model order reduction of bilinear control systems (January 28, 2021) - Mian Ilyas Ahmad, Co-authors: Umair Zulfiqar, Victor Sreeram, Xin Du
11. Implicit Volterra series interpolation for model reduction of bilinear systems (May 15, 2017) - Mian Ilyas Ahmad, Co-authors: Ulrike Baur, Peter Benner
12. Krylov subspace-based model reduction for a class of bilinear descriptor systems I (May 01, 2017) - Mian Ilyas Ahmad, Co-authors: Peter Benner, Pawan Goyal
13. Preconditioned Multishift BiCG for H2-optimal model reduction (May 01, 2017) - Mian Ilyas Ahmad, Co-authors: Daniel B. Szyld, Martin Van Gijzen
14. Krylov subspace methods for model reduction of quadratic-bilinear systems (October 31, 2016) - Mian Ilyas Ahmad, Co-authors: Peter Benner, Imad Jaimoukha
15. Multivariate moment-matching for model order reduction of quadratic-bilinear systems using error bounds (December 12, 2022) - Muhammad Altaf Khattak, Mian Ilyas Ahmad, Co-authors: Lihong Feng, Peter Benner
16. Development of Model Reduction Framework for Continuous-Time Weighted and Limited-Interval Systems (June 14, 2022) - Sammana Batool, Muhammad Imran, Mian Ilyas Ahmad, Co-authors: Muhammad Imran
17. Development of Frequency Weighted Model Reduction Techniques for Discrete-Time One-Dimensional and Two-Dimensional Linear Systems With Error Bounds (February 10, 2022) - Muhammad Imran, Mian Ilyas Ahmad
18. Accuracy Enhancing Model Reduction Technique for Weighted and Limited Interval Systems with Error Bound (January 08, 2022) - Sammana Batool, Muhammad Imran, Mian Ilyas Ahmad
19. Computational techniques for H2 optimal frequency-limited model order reduction of large-scale sparse linear systems (October 23, 2021) - Mian Ilyas Ahmad, Co-authors: Xin Du, Kife I. Bin Iqbal, M. Monir Uddin, A. Mostakin Fony, Md. Tanzim Hossain, Mohammad Sahadet Hossain
20. Development of model reduction technique for weighted and limited-intervals gramians for discrete-time systems via balanced structure with error bound (September 12, 2021) - Sammana Batool, Muhammad Imran, Mian Ilyas Ahmad

HOD DEPARTMENT OF SCIENCES: Fouzia Perveen Malik

- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)

- **Contact:** 0519085574

Academic Background:

- PhD (Physical Chemistry), Quaid-i-Azam University, July 05, 2007 - October 25, 2013

Honours and Awards:

- NUST Entry Test: Selected by Prorector Acad NUST for the preparation of NUST entry test, February 25, 2014
- Poster Prize: Awarded first prize in Poster presentation in the Conference on "Recent Trends in Chemical Research" at The Department of Chemistry, SBA School of Sciences and Engineering, LUMS, Lahore and Quaid-i-Azam University Islamabad, Pakistan, September 27, 2013
- Visiting Professor: Invited as Visiting Professor at Institute for Polymers, Composites and Biomaterials (IPCB-CNR) Via Campi Flegrei, 34 - 80078 Pozzuoli (Na) Italy for a research visit during July 01, 2016 - August 30, 2016
- IUPAC: Appointed as IUPAC National Representative for the year 2016-2017, August 09, 2015
- National Representative: Selected as one of two IUPAC delegates by Chemical Society of Pakistan (CSP) as National Representative in 48th IUPAC General Assembly Meeting and 45th IUPAC conference at Busan, Korea 2015, July 13, 2015

Experience: Associate Prof. NUST, H -12 Campus IslmabadAugust 28, 2019 - February 26, 2022

Publications:

1. Advancing nitrate reduction to ammonia: insights into mechanism, activity control, and catalyst design over Pt nanoparticle-based ZrO2
    - **Primary Author:** Fouzia Perveen Malik **Co-Authors:** Ayyaz Mahmood, Tehmina Akram, Shenggui Chen, Ahmad Irfan, Huafu Chen
2. In-situ formation of Azo dye capped-silver nanoparticles and their nanocomposite with reduced graphene oxide for dye degradation
    - **Primary Author:** Fouzia Perveen Malik **Co-Authors:** Iram Noreen, Awab Hashmi, Yasir Iqbal, Mudassir Iqbal, Faheem Amin
3. Hydrogen production and storage through adsorption and dissociation of H2O on pristine and functionalized SWCNT: a DFT approach
    - **Primary Author:** Fouzia Perveen Malik **Co-Author:** Aqsa Aleem
4. An imidazolium-based cobalt(II) sulfato complex: Synthesis, structural, spectroscopic, thermal analysis, magnetic studies and in silico molecular docking investigations
    - **Primary Author:** Fouzia Perveen Malik **Co-Authors:** Abiodun A. Ajibola, Agnieszka Wojciechowska, Magdalena Fitta, Robert Pełka, Lesław Sieron, Waldemar Maniukiewicz
5. Synthesis, DNA binding and biological evaluation of benzimidazole Schiff base ligands and their metal(ii) complexes
    - **Primary Author:** Fouzia Perveen Malik **Co-Authors:** Khalid Mahmood, Zareen Akhter, Aisha, Muneeba Bibi, Hammad Ismail, Nida Tabassum, Sammer Yousuf, Ahmad Raza Ashraf, Muhammad Abdul Qayyum
6. New Hybrid Material's Structure, Electric-Dielectric Properties, Spectroscopic Analysis, DNA Interactions, and Antibacterial Application of Bis-(5-nitrobenzimidzolium) Tetrachlorozincate Monohydrate
    - **Primary Author:** Fouzia Perveen Malik **Co-Authors:** Abdullah A. Alotaibi, Sabrine Hermi, Abdelhak Othmani, Hamdy A. Hassan, Werner Kaminsky, Cherif Ben Nasr, Mohamed Habib Mrad
7. Investigation of Newly Synthesized Bis-Acyl-Thiourea Derivatives of 4-Nitrobenzene-1,2-Diamine for Their DNA Binding, Urease Inhibition, and Anti-Brain-Tumor Activities
    - **Primary Author:** Fouzia Perveen Malik **Co-Authors:** Nasima Arshad, Uzma Parveen, Pervaiz Ali Channar, Aamer Saeed, Waseem Sharaf Saeed, Aneela Javed, Hammad Ismail, Muhammad Ismail Mir, Atteeque Ahmed, Basit Azad, Ishaq Khan
8. Eco-friendly Synthesis of benzyl 4 -(((4-bromophenyl)sulfonamido)methyl)cyclohexane -1- carboxylate; Physical and Biological Evaluation
    - Authors: Fouzia Perveen Malik Co-Authors: Muhammad Asam Raza, Muhammad Danish, Mariyam Allah Ditta, Shafiq Ur-Rehman, Jan K Maurin, Armand Budzianowski
9. MnII, ZnII and CdII Dinuclear Complexes Based on Mixed Benzoic Acid and Metronidazole Benzoate: Syntheses, Crystal structures, Spectroscopic, Hirshfeld surface analysis, and Molecular modelling of their potential activity against Porphyromas gingivalis
    - Author: Fouzia Perveen Malik Co-Authors: Abiodun A. Ajibola, Agnieszka Wojciechowska, Lesław Sieron, Waldemar Maniukiewicz
10. A New Zn(II) Metal Hybrid Material of 5 -Nitrobenzimidazolium Organic Cation (C7H6N3O2)2[ZnCl4]: Elaboration, Structure, Hirshfeld Surface, Spectroscopic, Molecular Docking Analysis, Electric and Dielectric Properties
    - Author: Fouzia Perveen Malik Co-Authors: Chaima Ayari, Abdullah A. Alotaibi, Mohammed A. Baashen, Abdulhadi H. Almarri, Khalid M. Alotaibi, Mohammed S. M. Abdelbaky, Santiago Garcia-Granda, Abdelhak Othmani, Cherif Ben Nasr, Mohamed Habib Mrad
11. Identification of two novel thiazolidin-2-imines as tyrosinase inhibitors: synthesis, crystal structure, molecular docking and DFT studies
    - Author: Fouzia Perveen Malik Co-Authors: Syeda Aaliya Shehzadi, Aamer Saeed, Pervaiz Ali Channar, Ifzan Arshad, Qamar Abbas, Saima Kalsoom, Sammer Yousaf, Jim Simpson
12. FTIR, NMR and UV–Visible Spectral Investigations, Theoretical Calculations, Topological Analysis, Chemical Stability, and Molecular Docking Study on Novel Bioactive Compound: The 5-(5-Nitro Furan-2-Ylmethylen), 3-N-(2-Methoxy Phenyl),2-N'-(2-Methoxyphenyl) Imino Thiazolidin-4-One
    - Author: Fouzia Perveen Malik Co-Authors: Rachida Rahmani, Nadia Benhalima, Ahmed Djafri, Nawel Khelloul, Abdelkader Chouaih, Ayada Djafri, Mohammed Benali Kanoun, Souraya Goumri-Said
13. Appraisal of novel azomethine-thioxoimidazolidinone conjugates as ecto-5'-nucleotidase inhibitors: synthesis and molecular docking studies
    - Author: Fouzia Perveen Malik Co-Authors: Pervaiz Ali Channar, Sehrish Bano, Sidra Hassan, Aamer Saeed, Pervaiz Ali Mahesar, Imtiaz Ali Khan, Jamshed Iqbal

HOD DEPARTMENT OF SCIENCES: Fouzia Perveen Malik

Publications:

14. Synthesis of 4-((4-(4-nitrophenoxy)phenyl)diazenyl)benzene-1,3-benzoate: Experimental, DFT and, DNA binding investigation through spectral and molecular docking studies
    - **Author:** Fouzia Perveen Malik **Co-Authors:** Samina Qamar, Zareen Akhter, Sammer Yousuf, Muhammd Sultan, Sule Erten Ela, Naimat Ullah, Maida Fatima, Kalsoom Fatima, Uzma Nazir
15. Ultrasonic assisted synthesis of Zn(II) 2D coordination polymer and 4-nitroaniline photoluminescence sensing manifestation through DFT studies
    - **Author:** Fouzia Malik **Co-Authors:** Madiha Riasat, Shahzad Sharif, Shazia Khurshid, Sidra Farid, Rehana Bano, Mazhar Amjad Gilani, Onur S¸ahin
16. Investigating effect of mutation on structure and function of G6PD enzyme: a comparative molecular dynamics simulation study
    - **Author:** Fouzia Perveen Malik **Co-Authors:** Sadaf Rani, Jamshed Anwar, Rehan Zafar Paracha
17. 4,4-Nitrophenoxyaniline derived Azo ester: Structural elucidation, DFT simulation, and DNA interactional studies via wet and in silico methods
    - **Author:** Fouzia Perveen Malik **Co-Authors:** Samina Qamar, Zareen Akhtar, Sammer Yousuf, Muhammd Sultan, Sule Erten Ela, Naimat Ullah, Kalsoom Fatima, Sehrish Kanwal
18. Efficient Synthesis of Novel N-[4-Methyl-3-(4-(5-phenyl-1,3,4-oxadiazol-2-yl)phenyl)thiazol-2(3H)-ylidene]benzamide Hybrid Ring System as Potential Antibacterial Agents
    - **Author:** Fouzia Perveen Malik **Co-Authors:** Hummera Rafique, Aamer Saeed, Muhammad Naseem, Tauqeer Riaz, Amara Mumtaz, Aneela Maalik, Muhammad Sharif
19. Investigations on Anticancer Potentials by DNA Binding and Cytotoxicity Studies for Newly Synthesized and Characterized Imidazolidine and Thiazolidine-Based Isatin Derivatives
    - **Author:** Fouzia Perveen Malik **Co-Authors:** Nasima Arshad, Muhammad Ismail Mir, Aneela Javed, Memona Javaid, Aamer Saeed, Pervaiz Ali Channar, Shahid Iqbal Farooqi, Saad Alkahtani, Jamshed Anwar
20. Isomeric nitro substituted symmetrical benzamides: Crystal Structures, Hirshfeld surface analysis, 3D energy frameworks, DNA binding and cell line studies
    - **Author:** Fouzia Perveen Malik **Co-Authors:** Atteeque Ahmad, Nasima Arshad, Rabail Ujan, Aamer Saeed, Pervaiz Ali Channar, Shahid I. Farooqi, Ghulam Shabir, Tuncer Hökelek, Michael Bolte, Salik Javed Kakar
21. Synthesis, crystal structures, Hirshfeld surface analysis, theoretical insight and molecular docking studies of dinuclear and triply bridged Cu(II) carboxylate complexes with 2,2'-bipyridine or 1,10-phenanthroline
    - **Author:** Fouzia Malik **Co-Authors:** Abiodun A. Ajibola, Kyle A. Grice, Agnieszka Wojciechowska, Lesław Siero, Waldemar Maniukiewicz
22. Pd(II) complexes with chelating N-(1-alkylpyridin-4(1H)-ylidene)amide (PYA) ligands: Synthesis, characterization and evaluation of anticancer activity
    - **Author:** Fouzia Malik **Co-Authors:** Muhammad Naveed Zafar, Abdul Mannan Butt, Gul-e-Saba Chaudhry, Muhammad Faizan Nazar, Sara Masood, Andrew Francis Dalebrook, Ehsan Ullah Mughal, Sajjad Hussain Sumrra, Yeong Yik Sung, Leonard James Wright
23. Single crystal, Hirshfeld surface, DFT analyses of (E)-2-(2-chloro-6-fluorobenzylidene)hydrazinecarbothioamide: Elastase inhibition and DNA binding studies
    - **Author:** Fouzia Malik **Co-Authors:** Rabail Ujan, Nasima Arshad, Qamar Abbas, Pervaiz Ali Channar, Shahid I.
24. Synthesis, X-ray, Hirshfeld surface analysis, exploration of DNA binding, urease enzyme inhibition and anticancer activities of novel adamantane-naphthyl thiourea conjugate
    - Author: Fouzia Malik Co-Authors: Aamer Saeed, Nasima Arshad, Rabail Ujan, Shahid I. Farooqi, Pervaiz Ali Channar, Ghulam Shabbir, Hesham Saeedi, Aneela Javed, Maham Yamin, Michael Bolte, Tuncer Hekelek
25. Designing, spectroscopic and structural characterization and evaluation of biological potential as well as molecular docking studies of Zn(II)-based metallo-pharmaceuticals
    - Author: Fouzia Perveen Malik Co-Authors: Muhammad Sirajuddin, Muhammad Zubair, Ali Haider, Akhtar Nadman, Saqib Ali, Mehwish Tahir, Haris Bin Tanveer, Muhammad Nawaz Tahir
26. Experimental spectral characterization, Hirshfeld surface analysis, DFT/ TD-DFT calculations and docking studies of (2Z,5Z)-5-(4-nitrobenzylidene)-3-N(2-methoxyphenyl)-2-N'(2-methoxyphenylimino) thiazolidin-4-one
    - Author: Fouzia Perveen Malik Co-Authors: Ahmed Djafri, Nadia Benhalima, Nawel Khelloul, Rachida Rahmani, Ayada Djafri, Abdelkader Chouaih, Mohammed Benali Kanoun, Souraya Goumri-Said
27. Structure and surface analysis of ibuprofen-organotin conjugate: Potential anti-cancer drug candidacy of the compound is proven by in-vitro DNA binding and cytotoxicity studies
    - Author: Fouzia Malik Co-Authors: Nasima Arshad, Shahid Iqbal Farooqi, Pervaiz Ali Channar, Aamer Saeed, Aneela Javed, Tuncer Hokelek, Ulrich Florke
28. pH-sensitive 4,(4-Nitrophenoxy)benzeneamine) derived azo dye: X-ray crystallographic, DFT and electrochemical studies
    - Author: Fouzia Perveen Co-Authors: Zareen Akhter, Sammer Yousuf, Samina Qamar
29. New Insight Into Catalytic Mechanism of Glucose-6-Phosphate Dehydrogenase Enzyme: A DFT Study
    - Author: Fouzia Perveen Co-Authors: Sadaf Rani, Jerry P Jasinski, Rehan Zafar Paracha, Haris Bin Tanveer, Farooq Ahmad Kiani, Rodrigo Albuquerque
30. A Five-Coordinate Copper(II) Complex Constructed from Sterically Hindered 4-Chlorobenzoate and Benzimidazole: Synthesis, Crystal Structure, Hirshfeld Surface Analysis, DFT, Docking Studies and Antibacterial Activity
    - Author: Fouzia Perveen Malik Co-Authors: Abiodun A. Ajibola, Kalsoom Jan, Ibikunle I. Anibijuwon, Solomon E. Shaibu, Lesław Sieroń, Waldemar Maniukiewicz
31. Charge transfer and opto-electronic properties of some newly designed polycatenar discotic liquid crystal derivatives: a DFT study
    - Author: Fouzia Malik Co-Authors: Bushra Nosheen, Zaman Ashraf, Abdul Bais, Tayyaba Noor
32. Synthesis, X-ray crystal structure elucidation and Hirshfeld surface analysis of N-((4-(1H-benzo[d] imidazole-2-yl)phenyl)carbamothioyl)benzamide: investigations for elastase inhibition, antioxidant and DNA binding potentials for biological applications
    - Author: Fouzia Perveen Malik Co-Authors: Mamoona Rafiq, Rabail Ujan, Nasima Arshad, Aamer Saeed, Pervaiz Ali Channar, Saba Ashraf, Qamar Abbas, Ashfaq Ahmed, Tuncer Hokelek, Manpreet Kaur, Jerry P. Jasinski
33. New aryl Schiff bases of thiadiazole derivative of ibuprofen as DNA binders and potential anticancer drug candidates
    - Author: Fouzia Perveen Co-Authors: Nasima Arshad, Pervaiz Ali Channar, Shahid Iqbal Farooqi, Aamer Saeed, Fayaz Ali Larik, Aneela Javed, Maham Yamin

HOD DEPARTMENT OF SCIENCES: Fouzia Perveen Malik

Publications

34. Syntheses, crystal structures and DNA binding potential of copper(II) carboxylates
    - **Author:** Fouzia Perveen Malik, **Co-Authors:** Niaz Muhammad, Muhammad Ikram, Musadiq Ibrahim, Mohammad Ibrahim, Abel Viola, Sadia Rehman, Shaukat Shujah, Waliullah Khan, Dilawar Farhan Shams, Carola Schulzke
35. Synthesis, molecular structure, spectroscopic properties and biological evaluation of 4-substituted-N-(1H-tetrazol-5-yl) benzenesulfonamides: Combined experimental, DFT and docking study
    - **Author:** Fouzia Perveen **Co-Authors:** Muhammad Athar Abbasi, Ayyaz Mahmood, Edna Barboza de Lima, Tehmina Akram, Muhammad Ashraf, Irshad Ahmad, Souraya Goumri-Said
36. Experimental, theoretical, and surface study for corrosion inhibition of mild steel in 1 M HCl by using synthetic antibiotic derivatives
    - **Author:** Fouzia Perveen **Co-Authors:** Ashish Kumar Singh, Bhawna Chugh, Muhammad Akram, Nasima Arshad, Imran Rasheed, Fouzia Altaf, Pervaiz Ali Channar, Aamer Saeed
37. Design, Synthesis, Crystal Structure, Fluorescence, Molecular Docking and DFT Studies of 3,6-Dinitro-N-octylcarbazole
    - **Author:** Fouzia Perveen Malik **Co-Authors:** Aamer Saeed, Naghmana Kausar, Zaman Ashraf, Sadia Akram, Muhammad Naveed Zafar, Muhammad Tayyab, Ulrich Floerke, Hummera Rafique
38. Synthesis, characterization and anti-cancer properties of water-soluble bis(PYE) pro-ligands and derived palladium(II) complexes
    - **Author:** Fouzia Perveen Malik **Co-Authors:** Sara Masood, Gul-e-Saba Chaudhry, Tengku Sifzizul Tengku Muhammad, Andrew Francis Dalebrook, Muhammad Faizan Nazar, Muhammad Naveed Zafar, Ehsan Ullah Mughal, Leonard James Wright
39. Synthesis, characterization and computational study of an ilmenite-structured Ni3Mn3Ti6O18 thin film photoanode for solar water splitting
    - **Author:** Fouzia Perveen **Co-Authors:** Khadija Munawar, Muhammad Mehmood Shahid, Wan Jeffrey Basirun, Misni Bin Misran, Muhammad Mazhar
40. Aroylthiourea derivatives of ciprofloxacin drug as DNA binder: Theoretical, spectroscopic and electrochemical studies along with cytotoxicity assessment
    - **Author:** Fouzia Perveen **Co-Authors:** Nasima Arshad, Shahid Iqbal Farooqi, Pervaiz Ali Channar, Aamer Saeed, Aneela Javeed
41. Antibacterial activity of Mg1-xNixO(x=0.5) nano-solid solution; experimental and computational approach
    - **Author:** Fouzia Malik **Co-Authors:** Zahida Parveen Malik, Memoona Qammar, Tahir Ahmed Baig, Abdul J. Chaudhary
42. Synthesis, characterization and biological evaluation of ferrocene based poly(azomethene)esters
    - **Author:** Fouzia Malik **Co-Authors:** Sehrish Sarfraz, Zareen Akhter, Muhammad Siddiq, Saima Kalsoom, Asghari Gul, Farzana Latif Ansari, Bushra Mirza
43. Synthesis, single crystal X-ray structure and thermal analysis of a novel polycatenar liquid crystal: Theoretical and experimental approaches
    - **Author:** Fouzia Perveen **Co-Authors:** Zaman Ashraf, Muhammad Nawaz Tahir, Abdul Bais, Mujahid Abbas, Imtiaz Ahmed

44. Molecular Docking and Quantitative Structure Activity Relationship (QSAR) Studies of Some Newly Synthesized Poly (Azomethine) Esters
    - Author: Fouzia Perveen Co-Authors: Asghari Gul, Zareen Akhter, Saima Kalsoom, Farzana L. Ansari, Muhammad Siddiq
45. Synthesis, Characterization and Catalytic Activity of Heteroleptic Rhodium Complexes for C-N Couplings
    - Author: Fouzia Perveen Co-Authors: M. N. Zafar, A. Naz, Ehsan Ullah Mughal, Gul-e-Saba, K. Hina
46. Mononuclear Copper(I) Complexes with Triphenylphosphine and N,N'-Disubstituted Thioureas: Synthesis, Characterization, and Biological Evaluation
    - Author: Fouzia Parveen Malik Co-Authors: Syed Ishtiaq Khan, Inayat Ali Khan, Amin Badshah, Saira Tabassum, Ikram Ullah, Davit Zargarian, Muhammad Khawar Rauf
47. Electrochemical, Spectroscopic and Theoretical Monitoring of Anthracyclines' Interactions with DNA and Ascorbic Acid by Adopting Two Routes: Cancer Cell Line Studies
    - Author: Fouzia Perveen Co-Authors: Nasima Arshad, Rumana Qureshi, Jahanzaib Nowsherwan, Aiesha Sultan, Bushra Nosheen, Hummera Rafique
48. Synthesis, Theoretical, Spectroscopic and Electrochemical DNA Binding Investigations of 1,3,4-Thiadiazole Derivatives of Ibuprofen and Ciprofloxacin: Cancer Cell Line Studies
    - Author: Fouzia Perveen Co-Authors: Shahid Iqbal Farooqi, Nasima Arshada, Pervaiz Ali Channar, Aamer Saeed, Fayaz Ali Larik, Aneela Javeed
49. Spectroscopic, Molecular Docking, and Structural Activity Studies of (E)-N0-(Substituted Benzylidene/Methylene) Isonicotinohydrazide Derivatives for DNA Binding and Their Biological Screening
    - Author: Fouzia Perveen Co-Authors: Nasima Arshad, Aamer Saeed, Pervaiz Ali Channar, Shahid Iqbal Farooqi, Fayaz Ali Larik, Hammad Ismail, Bushra Mirza
50. Synthesis, Characterization, DNA-Binding, Enzyme Inhibition and Antioxidant Studies of New N-Methylated Derivatives of Pyridinium Amine
    - Author: Fouzia Perveen Co-Authors: Muhammad Naveed Zafar, Muhammad Faizan Nazar, Ehsan Ullah Mughal, Humera Rafique, Muhammad Nawaz Tahir, Muhammad Sharif Akbar, Zabeen Zahra
51. Synthesis, Characterization of Amide Substituted Dexibuprofen Derivatives and Their Spectral, Voltammetric, and Docking Investigations for DNA Binding Interactions
    - Author: Fouzia Perveen Co-Authors: Nasima Arshad, Muhammad Zafran, Zaman Ashraf
52. Anti-HIV Screening and Molecular Docking Studies of Benzothiazolyl Thioureas
    - Author: Fouzia Perveen Co-Authors: Hummera Rafique, Aamer Saeed, Muhammad N. Zafar, Muhammad Sharif, Najim-Al Masoudi
53. Crystal Structure Analysis, Biological Evaluation by Docking and DFT Studies of a Novel Schiff Base
    - Author: Fouzia Perveen Co-Authors: Sadaf Afzal, Zareen Akhter, Asghari Gul, Muhammad Arif Nadeem, Nawaz Tahir
54. Synthesis, Structure, and Quantum Mechanical Calculations of Methyl 2-(5-((Quinolin-8-yloxy)-methyl)-1,3,4-oxadiazol-2-ylthio)-acetate
    - Author: Fouzia Perveen Co-Authors: Aamer Saeed, Naeem Abbas, Sidra Jamal, Ulrich Floerke
55. Experimental and Theoretical Studies on DNA Binding Affinities of Benzylidene Acetophenone and Its Derivatives
    - Author: Fouzia Perveen Co-Authors: Jaweria Ambreen, Rumana Qureshi, Saima Kulsum, Safeer Ahmed, Musfirah Khaleeq
56. Investigations of Drug-DNA Interactions Using Molecular Docking, Cyclic Voltammetry, and UV-Vis Spectroscopy
    - Author: Fouzia Perveen Malik Co-Authors: Rumana Qureshi, Farzana Latif Ansari, Saima Kalsoom, Safeer Ahmed
57. Flavonoid-DNA Binding Studies and Thermodynamic Parameters
    - Author: Fouzia Perveen Co-Authors: Naveed Kausar Janjua, Amber Shaheen, Azra Yaqub, Sana Sabahat, Misbah Mumtaz, Claus Jacob, Lalla Aicha Ba, Hamdoon A. Mohammed
58. Electrochemical, Spectroscopic, and Molecular Docking Studies of Anticancer Organogermalactones
    - Author: Fouzia Perveen Co-Authors: Rumana Qureshi, Afzal Shah, Safeer Ahmed, Farzana Latif Ansari, Saima Kalsoom, Sumera Mehboob

Head Of Department (HoD) SINES: Dr. Zartasha Mustansar:

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- **Contact**: 0518865743
- **Summary**: Zartasha Mustansar earned her PhD from the University of Manchester, UK (Sponsored by Microsoft Research Cambridge(MSR) & Dorothy Hodgkin). Research Area: Image based modeling & Biomechanics
- **Academic Background**:
    - PhD (Computational Biomechanics Image Based Modeling), University of Manchester, January 25, 2009 - May 09, 2015
- **Honours and Awards**:
    - Microsoft - Dorothy Hodgkin Awarded By Microsoft Research Cambridge under the scheme Microsoft Dorothy Hodgkin Postgraduate Award for PhD studies, January 01, 2009
    - Grace Hopper Scholarship: Grace Hopper Scholarship for Women in Computing co-sponsored by ACM - Microsoft - Google & Yahoo (Conf. Presentation) In USA, September 23, 2009
    - NRPU - HEC Award: NRPU - HEC Award worth 1.45 M, June 06, 2018
    - School / College Best Researcher Awards -2021, December 26, 2022
- **Experience**:
    - President, Robotics Chapter, University of Manchester, UK, March 01, 2010 - July 30, 2011
    - Research Assistant, University of Manchester, February 01, 2009 - February 01, 2010
    - Honorary Lecturer IIUI, May 01, 2008 - December 30, 2008

Head Of Department (HoD) SINES: Dr. Zartasha Mustansar:

Publications:

1. **System Level Modeling and Analysis of TNF-α mediated Sphingolipid Signaling Pathway in Neurological Disorders for the Prediction of Therapeutic Targets**
   - **Authors**: Zartasha Mustansar, Co-authors: Sanam Banarus, Rehan Zafar Paracha, Maryum Nisar, Ayesha Arif, Jamil Ahmad, Muhammad Tariq Saeed, Malik N Shuja
2. **Recognition of Children's Facial Expressions Using Deep Learned Features**
   - **Authors**: Zartasha Mustansar, Co-authors: Unqua Laraib, Arsalan Shaukat, Rizwan Ahmed Khan, Muhammad Usman Akram, Umer Asgher
3. **Using a poroelastodynamic model to investigate the dynamic behaviour of articular cartilage**
   - **Authors**: Zartasha Mustansar, Co-authors: Dean Chou, Yun-Di Li, Chen-Yuan Chung
4. **An insight into the structural, electronic, magnetic and optical properties of Cs doped and Cs-X (X=Mn, Fe) co-doped CdS for optoelectronic applications**
   - **Authors**: Zartasha Mustansar, Co-authors: M Junaid Iqbal Khan, Juan Liu, Saima Batool, Abid Latif, M Waseem, Iqra Majeed, Hamid Ullah, Javed Ahmad, Mazia Asghar
5. **Investigating structural, electronic, magnetic, and optical properties of Zr doped and Ti-Zr co-doped GaN for optoelectronic applications**
   - **Authors**: Zartasha Mustansar, Co-authors: M Junaid Iqbal Khan, Juan Liu, Saima Batool, Abid Latif, Iqra Majeed, M Yousaf, Imran Taj, Hamid Ullah, Masood Yousaf, Javed Ahmad, Mazia Asghar
6. **Computational modeling and simulation of stenosis of the cerebral aqueduct due to brain tumor**
   - **Authors**: Zartasha Mustansar, Co-authors: Uzair ul Haq, Ali Ahmad, Arsalan Shaukat, Sasa Cukovic, Faizan Nadeem, Sadia Taalay, M Junaid Iqbal Khan, Lee Margetts
7. **A Hybrid VDV Model for Automatic Diagnosis of Pneumothorax Using Class-Imbalanced Chest X-Rays Dataset**
   - **Authors**: Zartasha Mustansar, Co-authors: Tahira Iqbal, Arsalan Shaukat, Muhammad Usman Akram, Abdul Wahab Muzaffar, Yung-Cheol Byun
8. **Exploring structural, electronic, optical, magnetic, and thermoelectric properties of Pt doped and Pt-Cu/Au co-doped GaN**
   - **Authors**: Zartasha Mustansar, Co-authors: Junaid Iqbal Khan, Mubashra Shakeel, Iqra Majeed, Abid Latif, Javed Ahmad, Hamid Ullah, M Fakhar-e-Alam, Mazia Asghar, Shaima A M Abdelmohsen
9. **Interaction Analysis of Adenovirus L5 Protein With Pancreatic Cancer Cell Surface Receptor to Analyze Its Affinity for Oncolytic Virus Therapy**
   - **Authors**: Zartasha Mustansar, Co-authors: Maryam Nisar, Rehan Zafar Paracha, Alvina Gul, Iqra Arshad, Saima Ejaz, Deedar Murad, Shahzeb Khan
10. **Muscle Health and Lower Back Pain: Architype Towards Simulation-Driven Product Design in Healthcare**
    - **Authors**: Zartasha Mustansar, Sadia Taalay
11. **Large Eddy Simulation of the Flow Past a Soccer Ball**
    - **Authors**: Zartasha Mustansar, Co-authors: Sarmad Iftikhar, Salma Sherbaz, Hafiz Ali Seole, Adnan Maqsood
12. **Investigating effect of different Hubbard values on the electronic structure, magnetic and optical properties of Ru doped GaN**
    - **Authors**: Zartasha Mustansar, Co-authors: Abid Latif, Junaid Iqbal Khan, Zarfishan Kanwal, Iqra Hafeez, Nauman Usmani, Javed Ahmad, Hamid Ullah
13. **Automatic Diagnosis of Pneumothorax from Chest Radiographs: A Systematic Literature Review**
    - **Authors**: Zartasha Mustansar, Co-authors: Tahira Iqbal, Arsalan Shaukat, Muhammad Usman Akram, Aimal Khan
14. **How growing tumor impacts intracranial pressure and deformation mechanics of brain**
    - **Authors**: Zartasha Mustansar, Co-authors: Ali Ahmad, Uzair ul Haq, Arsalan Shaukat, Lee Margetts
15. **First principle investigations of the structural, electronic, magnetic, and optical properties of GaN co-doped with carbon and gold (C–Au@GaN)**
    - **Authors**: Zartasha Mustansar, Co-authors: Abid Latif, M. Junaid Iqbal Khan, ZarfishanKanwal, Murtaza Saleem, Javed Ahmad, Hamid Ullah
16. **Finite-element analysis of microwave scattering from a three-dimensional human head model for brain stroke detection**
    - **Authors**: Zartasha Mustansar, Co-authors: Awais Munawar Qureshi, Samah Mustafa
17. **Levels of detail analysis of microwave scattering from human head models for brain stroke detection**
    - **Authors**: Zartasha Mustansar, Co-authors: Awais Munawar Qureshi
18. **Isotropic Surround Suppression and Hough Transform based Target Recognition from Aerial Images**
    - **Authors**: Hafiz Suliman Munawar, Adnan Maqsood, Zartasha Mustansar
19. **A study of the progression of damage in an axially loaded Branta leucopsis femur using X-ray computed tomography and digital image correlation**
    - **Authors**: Zartasha Mustansar, Samuel A. McDonald, William Irvin Sellers, Phillip Lars Manning, Tristan Lowe, Philip J. Withers, Lee Margetts
20. **Analysis of Microwave Scattering from a Realistic Human Head Model for Brain Stroke Detection Using Electromagnetic Impedance Tomography**
    - **Authors**: Awais Munawar Qureshi, Zartasha Mustansar, Adnan Maqsood
21. **An investigation into electromagnetic-based impedance tomography using a realistic human head model**
    - **Authors**: Awais Munawar, Zartasha Mustansar, Ahmed e Nadeem, Mahmood Akhtar
22. **Cloning, expression, and modeling studies of somatotropin cDNA of local buffalo breed - Nili ravi**
    - **Authors**: Sumbul Khalid, Sardar Faisal, Mirza Imran Shahzad, Qudsia Bashir, Syeda Zareen Saba, Zartasha Mustansar, Ayesha Fatima, Azra Khanum

HOD RESEARCH: Ammar Mushtaq

- **Name:** Ammar Mushtaq
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 5190855736
- **Summary:**
    - Pursuing research in Computational Fluid Dynamics (CFD) with focus on non-Newtonian and nanofluid flows, aerodynamics, and optimization.

Academic Background

- PhD (Applied Math)
    - National University of Sciences and Technology (NUST), Islamabad
    - June 20, 2011 - November 25, 2015

Honours and Awards

- RPA2017 Research Productivity Award (RPA)
    - Awarded by Pakistan Council for Science and Technology (PCST)
    - October 06, 2008
- Indigenous Scholarship
    - MS Leading to PhD

Publications:

1. **Modelling and analysis of the complement 2 system signaling pathways: Roles of C3, C5a, and pro-inflammatory cytokines in SARS-CoV-2 infection**
    - **Authors**: Didar Murad, Rehan Zafar Paracha, Muhammad Tariq Saeed, Jamil Ahmad, Ammar Mushtaq, Maleeha Humayun
2. **Numerical exploration of buoyancy-inspired flow of pseudoplastic fluid along a vertical cylinder with viscous dissipation effects**
    - **Authors**: Iram Showkat, Ammar Mushtaq, Meraj Mustafa
3. **A numerical study of rotationally symmetric nanofluid flow over a permeable surface using Buongiorno model**
    - **Authors**: Sahreen Tahira, Ammar Mushtaq, Meraj Mustafa
4. **Rotationally symmetric flow of Cu-Al2O3/water hybrid nanofluid over a heated porous boundary**
    - **Authors**: Sahreen Tahira, Meraj Mustafa Hashmi, Ammar Mushtaq
5. **Dual solutions for fluid flow over a stretching/shrinking rotating disk subject to variable fluid properties**
    - **Authors**: Kohilavani Naganthran, Meraj Mustafa Hashmi, Ammar Mushtaq, Roslinda Nazar
6. **Modeling MHD swirling flow due to a rough rotating disk with nonlinear radiation and chemically reactive solute**
    - **Authors**: Meraj Mustafa Hashmi, Ammar Mushtaq, Tasawar Hayat, Ahmed Alsaedi
7. **Non-aligned MHD stagnation-point flow of upper-convected Maxwell fluid with nonlinear thermal radiation**
    - **Authors**: Meraj Mustafa, Ammar Mushtaq, Tasawar Hayat, Ahmed Alsaedi
8. **Buoyancy effects in stagnation-point flow of Maxwell fluid utilizing non-Fourier heat flux approach**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa, Tasawar Hayat, Ahmed Alsaedi
9. **Consequences of convection-radiation interaction for magnetite-water nanofluid flow due to a moving plate**
    - **Authors**: Ammar Mushtaq, Junaid Ahmad Khan, Meraj Mustafa Hashmi, Tasawar Hayat, Ahmad Alsaedi
10. **Influence of Non-linear Radiation Heat Flux on Rotating Maxwell Fluid over a Deformable Surface: A Numerical Study**
    - **Authors**: Meraj Mustafa Hashmi, Ammar Mushtaq, Tasawar Hayat, Ahmed Alsaedi
11. **Computations for nanofluid flow near a stretchable rotating disk with axial magnetic field and convective conditions**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa
12. **Numerical Study of MHD Viscoelastic Fluid Flow with Binary Chemical Reaction and Arrhenius Activation Energy**
    - **Authors**: Meraj Mustafa, Ammar Mushtaq, Tasawar Hayat, A. Alsaedi
13. **Parametric Study and Optimization of Ceiling Fan Blades for Improved Aerodynamic Performance**
    - **Authors**: Ehsan Adeeb, Adnan Maqsood, Ammar Mushtaq, C. H. Sohn
14. **Boundary layer flow of Maxwell fluid in rotating frame with binary chemical reaction and activation energy**
    - **Authors**: Z. Shafique, Meraj Mustafa, Ammar Mushtaq
15. **Numerical study for rotating flow of nanofluids caused by an exponentially stretching sheet**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa, Tasawar Hayat, A. Alsaedi
16. **Boundary layer flow over a moving plate in a flowing fluid considering nonlinear radiations**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa, Tasawar Hayat, A. Alsaedi
17. **A numerical study for three-dimensional viscoelastic flow inspired by nonlinear radiative heat flux**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa Hashmi, Tasawar Hayat, Ahmed Alsaedi
18. **On three-dimensional flow of nanofluids past a convectively heated deformable surface: A numerical study**
    - **Authors**: Junaid Ahmad Khan, Meraj Mustafa, Ammar Mushtaq
19. **Rotating Flow of Magnetite-Water Nanofluid over a Stretching Surface Inspired by NonLinear Thermal Radiation**
    - **Authors**: Meraj Mustafa Hashmi, Ammar Mushtaq, Tasawar Hayat, A. Alsaedi
20. **Numerical solution for Sakiadis flow of upper-convected Maxwell fluid using Cattaneo-Christov heat flux model**
    - **Authors**: Ammar Mushtaq, S. Abbasbandy, Meraj Mustafa, Tasawar Hayat, A. Alsaedi
21. **Model for natural convective flow of visco-elastic nanofluid past an isothermal vertical plate**
    - **Authors**: Meraj Mustafa, Ammar Mushtaq
22. **Model to study the non-linear radiation heat transfer in the stagnation-point flow of power-law fluid**
    - **Authors**: Meraj Mustafa Hashmi, Ammar Mushtaq, Tasawar Hayat, Ahmed Alsaedi
23. **Radiation effects in three-dimensional flow over a bi-directional exponentially stretching sheet**
    - **Authors**: Meraj Mustafa, Ammar Mushtaq, Tasawar Hayat, A. Alsaedi

HOD RESEARCH: Ammar Mushtaq

Publications:

24. **Numerical study of the non-linear radiation heat transfer problem for the flow of a second-grade fluid**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa Hashmi, T. Hayat, A. Alsaedi
25. **On the Numerical Solution of the Nonlinear Radiation Heat Transfer Problem in a Three-Dimensional Flow**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa, Tasawar Hayat, A. Alsaedi
26. **Effects of Thermal Radiation on the Stagnation-Point Flow of Upper-Convected Maxwell Fluid over a Stretching Sheet**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa, Tasawar Hayat, A. Alsaedi
27. **Nonlinear Radiation Heat Transfer Effects in the Natural Convective Boundary Layer Flow of Nanofluid Past a Vertical Plate: A Numerical Study**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa, Tasawar Hayat, A. Alsaedi
28. **Nonlinear radiative heat transfer in the flow of nanofluid due to solar energy: A numerical study**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa, Tasawar Hayat, Ahmed Alsaedi
29. **Exponentially Stretching Sheet in a Powell –Eyring Fluid: Numerical and Series Solutions**
    - **Authors**: Ammar Mushtaq, Meraj Mustafa Hashmi, Tasawar Hayat, Mahmood Rahi, Ahmed Alsaedi

PROFESSOR: Ishrat Jabeen

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Academic Background

- PhD (Pharmacoinformatics)
    - Universität Vienna
    - April 14, 2008 - March 27, 2012

Experience

- **Associate Professor**
    - RCMS, National University of Sciences and Technology (NUST)
    - December 28, 2017 - March 02, 2022
- **Assistant Professor**
    - RCMS, National University of Sciences and Technology (NUST)
    - May 07, 2013 - December 28, 2017
- **Assistant Professor**
    - RCMS, National University of Sciences and Technology (NUST)
    - May 07, 2012 - May 07, 2013

Publications:

1. **Synthesis, Characterization, Theoretical and Experimental Anticancer Evaluation of Novel Cocrystals of 5-Fluorouracil and Schiff Bases against SW480 Colorectal Carcinoma**
    - **Authors**: Farhat Jubeen, Ishrat Jabeen, Usman Aftab, Sadia Noor, Mah e Hareem, Misbah Sultan, Mohsin Kazi
2. **Smart Wireless Sensor Technology for Healthcare Monitoring System Using Cognitive Radio Networks**
    - **Authors**: Tallat Jabeen, Ishrat Jabeen, Humaira Ashraf, Atta Ullah, Noor Zaman Jhangi, Rania M. Ghoniem, Sayan Kumar Ray
3. **An Intelligent Healthcare System Using IoT in Wireless Sensor Network**
    - **Authors**: Tallat Jabeen, ISHRAT JABEEN, Humaira Ashraf, N. Z. Jhanjhi, Abdulsalam Yassine, M. Shamim Hossain
4. **Structural and functional insight into a new emerging target IP3R in cancer**
    - **Authors**: Humaira Ismatullah, Ishrat Jabeen, Yusra Sajid Kiani
5. **Identification and Empiric Evaluation of New Inhibitors of the Multidrug Transporter P-Glycoprotein (ABCB1)**
    - **Authors**: Yasmeen Cheema, Yusra Sajid Kiani, Kenneth J. Linton, Ishrat Jabeen
6. **Anticancer potential of novel 5-Fluorouracil co-crystals against MCF7 breast and SW480 colon cancer cell lines along with docking studies**
    - **Authors**: Farhat Jubeen, Sana Ijaz, Ishrat Jabeen, Usman Aftab, Wajeeha Mehdi, Awais Altaf, Siham A. Alissa, Hanan A. Al-Ghulikah, Safa Ezzine, Imen Bejaoui, Munawar Iqbal
7. **Decoding the Role of Epigenetics in Breast Cancer Using Formal Modeling and Machine-Learning Methods**
    - **Authors**: Ayesha Asim, Yusra Sajid Kiani, Muhammad Tariq Saeed, Ishrat Jabeen
8. **Combined Machine Learning and GRID-Independent Molecular Descriptor (GRIND) Models to Probe the Activity Profiles of 5-Lipoxygenase Activating Protein Inhibitors**
    - **Authors**: Hafiza Aliza Khan, Ishrat Jabeen
9. **A Monte Carlo Based COVID-19 Detection Framework for Smart Healthcare**
    - **Authors**: Tallat Jabeen, Ishrat Jabeen, Humaira Ashraf, Nz Jhanjhi, Mamoona Humayun, Mehedi Masud, Sultan Aljahdali
10. **Combined Pharmacophore and Grid-Independent Molecular Descriptors (GRIND) Analysis to Probe 3D Features of Inositol 1,4,5-Trisphosphate Receptor (IP3R) Inhibitors in Cancer**
    - **Authors**: Humaira Ismatullah, Ishrat Jabeen
11. **Molecular docking and pharmacophore models to probe binding hypothesis of inhibitors of hypoxia inducible factor-1**
    - **Authors**: Zaira Rehman, Ishrat Jabeen, Ammad Fahim, Attya Bhatti, Peter John
12. **Biological Regulatory Network (BRN) Analysis and Molecular Docking Simulations to Probe the Modulation of IP3R Mediated Ca2+ Signaling in Cancer**
    - **Authors**: Humaira Ismatullah, Ishrat Jabeen, Muhammad Tariq Saeed
13. **Molecular Dynamic Simulations to Probe Stereoselectivity of Tiagabine Binding with Human GAT1**
    - **Authors**: Sadia Zafar, Ishrat Jabeen
14. **Lipophilic Metabolic Efficiency (LipMetE) and Drug Efficiency Indices to Explore the Metabolic Properties of the Substrates of Selected Cytochrome P450 Isoforms**
    - **Authors**: Yusra Sajid Kiani, Ishrat Jabeen
15. **Molecular Dynamics Simulation Framework to Probe the Binding Hypothesis of CYP3A4 Inhibitors**
    - **Authors**: Yusra Sajid Kiani, Kara E. Ranaghan, Ishrat Jabeen, Adrian J. Mulholland
16. **Molecular Docking Guided Grid-Independent Descriptor Analysis to Probe the Impact of Water Molecules on Conformational Changes of hERG Inhibitors in Drug Trapping Phenomenon**
    - **Authors**: Saba Munawar, Jamie I. Vandenberg, Ishrat Jabeen
17. **Exploring the Chemical Space of Cytochrome P450 Inhibitors Using Integrated Physicochemical Parameters, Drug Efficiency Metrics and Decision Tree Models**
    - **Authors**: Yusra Sajid Kiani, Ishrat Jabeen
18. **Structure-Based Pharmacophore Models to Probe Anticancer Activity of Inhibitors of Protein Kinase B-beta (PKB ß)**
    - **Authors**: Noreen Akhtar, Ishrat Jabeen, Nasir Jalal, Jon Antilla
19. **GRID-independent molecular descriptor analysis and molecular docking studies to mimic the binding hypothesis of γ-aminobutyric acid transporter 1 (GAT1) inhibitors**
    - **Authors**: Sadia Zafar, Ishrat Jabeen
20. **Modeling and Simulation of hGAT1: A Mechanistic Investigation of the GABA Transport Process**
    - **Authors**: Sadia Zafar, Megin E. Nguyen, Ramaiah Muthyala, Ishrat Jabeen, Yuk Y. Sham
21. **Pharmacoinformatics Approach to Predict hERG Inhibition Potential of New Chemical Entities**
    - **Authors**: Saba Munawar, Monique J. Windley, Edwin G. Tse, Matthew H. Todd, Adam P. Hill, Jamie I. Vandenberg, Ishrat Jabeen
22. **Experimentally Validated Pharmacoinformatics Approach to Predict hERG Inhibition Potential of New Chemical Entities**
    - **Authors**: Saba Munawar, Monique J. Windley, Edwin G. Tse, Matthew H. Todd, Adam P. Hill, Jamie I. Vandenberg, Ishrat Jabeen
23. **Structure, Function, and Modulation of gamma-Aminobutyric Acid Transporter 1 (GAT1) in Neurological Disorders: A Pharmacoinformatic Prospective**
    - **Authors**: Sadia Zafar, Ishrat Jabeen
24. **Pharmacoinformatic Approaches to Design Novel Inhibitors of Protein Kinase B Pathways in Cancer**
    - **Authors**: Noreen Akhtar, Ishrat Jabeen
25. **Pharmacophore modeling for identification of anti-IGF-1R drugs and in-vitro validation of fulvestrant as a potential inhibitor**
    - **Authors**: Samra Khalid, Rumeza Hanif, Ishrat Jabeen, Qaisar Mansoor, Muhammad Ismail

PROFESSOR: Ishrat Jabeen

Publications:

26. **Structure-Function Mutational Analysis and Prediction of the Potential Impact of High-Risk Non-Synonymous Single-Nucleotide Polymorphism on Poliovirus 2A Protease Stability Using Comprehensive Informatics Approaches**
    - **Authors**: Amna Younus, Saba Munawar, Muhammad Faraz Bhatti, Aqsa Ikram, Faryal Mehwish Awan, Ishrat Jabeen, Nasar Virk, Hussnain Ahmed Janjua, Muhammad Arshad
27. **Structure-function mutation analysis and prediction of the potential impact of high-risk non-synonymous single nucleotide polymorphism on Poliovirus 2A protease stability using comprehensive proteomics approach**
    - **Authors**: Amna Younus, Saba Munawar, Muhammad Faraz Bhatti, Aqsa Ikram, Faryal Mehwish Awan, Ishrat Jabeen, Nasar-um-Minullah, Hussnain Ahmed Janjua, Muhammad Arshad
28. **Molecular docking simulations and GRID-independent molecular descriptor (GRIND) analysis to probe stereoselective interactions of CYP3A4 inhibitors**
    - **Authors**: Sadia Mukhtar, Yusra Sajid Kiani, Ishrat Jabeen
29. **Grid-independent Descriptors (GRIND) Analysis and SAR Guided Molecular Docking Studies to Probe Selectivity Profiles of Inhibitors of Multidrug Resistance Transporters ABCB1 and ABCG2**
    - **Authors**: Talha Shafi, Ishrat Jabeen
30. **A 2D-QSAR and Grid-Independent Molecular Descriptor (GRIND) analysis of quinoline-type inhibitors of Akt2: Exploration of the binding mode in the Pleckstrin Homology (PH) domain**
    - **Authors**: Noreen Akhtar, Ishrat Jabeen
31. **In silico Strategies to Probe Stereoselective Interactions of Multidrug Resistant Transporter P-glycoprotein**
    - **Authors**: Ishrat Jabeen
32. **Synthesis, Biological Activity and Quantitative Structure-Activity Relationship Studies of a Series of Benzopyranes and Benzopyrano[3,4-b][1,4]oxazines as Inhibitors of the Multidrug Transporter P-glycoprotein**
    - **Authors**: Zahida Parveen, Gerda Brunhofer, Ishrat Jabeen, Thomas Erker, Peter Chiba, Gerhard Ecker
33. **2D- and 3D-QSAR studies of a series of benzopyranes and benzopyrano[3,4b][1,4]-oxazines as inhibitors of the multidrug transporter P-glycoprotein**
    - **Authors**: Ishrat Jabeen, Penpun Wetwitayaklung, Peter Chiba, Manuel Pastor, Gerhard Ecker
34. **Structure–Activity Relationships, Ligand Efficiency, and Lipophilic Efficiency Profiles of Benzophenone-Type Inhibitors of the Multidrug Transporter P-Glycoprotein**
    - **Authors**: Ishrat Jabeen, Karin Pleban, Uwe Rinner, Peter Chiba, Gerhard Ecker
35. **Probing the stereoselectivity of P-glycoprotein —synthesis, biological activity and ligand docking studies of a set of enantiopure benzopyrano[3,4-b][1,4]oxazines**
    - **Authors**: Ishrat Jabeen, Penpun Wetwitayaklung, Freya Klepsch, Zahida Parveen, Peter Chiba, Gerhard Ecker
36. **Pharmacoinformatic approaches to design natural product type ligands of ABC-transporters**
    - **Authors**: Freya Klepsch, Ishrat Jabeen, P. Chiba, Gerhard Ecker

ASSOCIATE PROFESSOR: Muhammad Tariq Saeed

- **Name:** Muhammad Tariq Saeed
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 0519085573

Academic Background

- PhD (High Performance Computing)
    - National University of Sciences and Technology (NUST), Islamabad
    - September 30, 2010 - September 29, 2018

Honours and Awards

- Best Teacher Award 2018-2019

Experience

- **Assistant Professor**
    - National University of Sciences and Technology (NUST)
    - February 01, 2011 - February 24, 2022

Professor: Uzma Habib

- **Name:** Uzma Habib
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 0518865735

Academic Background

- PhD (Computational Chemistry)
    - Ruprecht-Karls-Universität Heidelberg
    - November 11, 2008 - May 25, 2012

ASSOCIATE PROFESSOR: Zamir Hussain

- **Name:** Zamir Hussain
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 5190855739

Summary

- Engaged in undergraduate and graduate teaching and research at NUST.
- Research focuses on applied statistics, especially in the estimation of extreme events.

Academic Background

- PhD (Applied Statistics)
    - Bahauddin Zakariya University (BZU), Multan
    - January 15, 2005 - October 22, 2012

Experience

- **Lecturer (BPS - 17)**
    - Pakistan Institute of Development Economics
    - January 11, 2010 - October 10, 2013

ASSOCIATE PROFESSOR: Rehan Zafar Paracha

- **Name:** Rehan Zafar Paracha
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 5190855730

Academic Background

- PhD (Virology And Immunology)
    - National University of Sciences and Technology (NUST), Islamabad
    - September 02, 2009 - October 01, 2015

Honours and Awards

- HEC Best Research Paper Award
    - 2014-2015

Experience

- **Assistant Professor**
    - National University of Sciences and Technology (NUST)
    - January 01, 2016 - October 01, 2020
- **Assistant Professor**
    - Shifa Tameer-e-Millat University
    - November 04, 2013 - December 31, 2015
- **Assistant Professor**
    - Margalla Institute of Health Sciences
    - June 07, 2010 - November 01, 2013
- **Senior Research Officer**
    - Faculty of Pharmacy, Gomal University, D.I Khan
    - February 08, 2008 - September 30, 2009
- **CEO**
    - Wilson's Pharmaceuticals
    - June 01, 2004 - August 07, 2005
- **Production Pharmacist**
    - Gray's Pharmaceuticals
    - December 10, 2003 - February 10, 2004

ASSOCIATE PROFESSOR: Hafeez Anwar

- **Name:** Hafeez Anwar
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 05190855746

Academic Background

- PhD (Informatics)
    - Technische Universität Wien
    - November 24, 2011 - September 30, 2015

Experience

- **Postdoc/Junior Professor**
    - Friedrich Alexander University
    - February 01, 2019 - January 31, 2020
- **Assistant Professor**
    - Department of Electrical and Computer Engineering, Comsats University Islamabad, Attock Campus
    - February 04, 2016 - September 03, 2023
- **Research Associate**
    - Vienna University of Technology
    - November 24, 2011 - September 30, 2015
- **Lecturer**
    - Department of Computer Systems Engineering, University of Engineering and Technology Peshawar
    - March 14, 2011 - October 31, 2011
- **Research Assistant**
    - Myongji University
    - March 24, 2009 - December 20, 2010

ASSOCIATE PROFESSOR: Muhammad Usman Shahid

- **Name:** Muhammad Usman Shahid
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)

ASSISTANT PROFESSOR: Absaar ul Jabbar

- **Name:** Absaar ul Jabbar
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 5190855725

Academic Background

- PhD (Computational Fluid Dynamics)
    - Technical University of Dortmund
    - November 01, 2011 - December 13, 2018

Experience

- **Research Associate**
    - Technical University Dortmund, Germany
    - November 01, 2011 - December 13, 2018
- **Assistant Professor**
    - University of Engineering and Technology, Lahore
    - February 01, 2008 - May 10, 2008
- **Mechanical Engineer**
    - Packages Limited
    - February 02, 2004 - September 30, 2005
- **Mechanical Engineer**
    - NESPAK
    - December 01, 2003 - February 01, 2004

ASSISTANT PROFESSOR: Salma Sherbaz

- **Name:** Salma Sherbaz
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 5190855738

Academic Background

- PhD (Fluid Mechanics)
    - Harbin Engineering University
    - September 01, 2010 - June 30, 2014

Honours and Awards

- Keynote Speaker
    - Spoke as a keynote speaker in 17th International Conference on High Performance Marine Vessels
    - April 20-21, 2012
    - Shanghai, China

ASSISTANT PROFESSOR: Salma Sherbaz

- **Name:** Salma Sherbaz
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 5190855738

Academic Background

- PhD (Fluid Mechanics)
    - Harbin Engineering University
    - September 01, 2010 - June 30, 2014

Honours and Awards

- Keynote Speaker
    - Spoke as a keynote speaker in 17th International Conference on High Performance Marine Vessels
    - April 20-21, 2012
    - Shanghai, China

ASSISTANT PROFESSOR: Shahzad Rasool

- **Name:** Shahzad Rasool
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 0518865737

Academic Background

- PhD (Computer Engineering - Haptics)
    - Nanyang Technological University
    - January 11, 2010 - December 12, 2014

Honours and Awards

- Best Paper Award
    - International conference on Cyberworlds, Visby, Sweden
    - October 09, 2015

Experience

- **Research Associate/Research Fellow**
    - Fraunhofer IDM at NTU
    - December 17, 2012 - August 12, 2016

ASSISTANT PROFESSOR: Mehak Rafiq

- **Name:** Mehak Rafiq
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 5190855733

Academic Background

- PhD (Computational Biology)
    - University of Greenwich
    - January 16, 2012 - February 27, 2015

Honours and Awards

- NRPU - HEC Understanding the role of iRhoms in EGFR signalling pathway and its role in Breast and Colorectal Cancer
    - Amount: 1.5 Million PKR
    - November 01, 2018

Experience

- **Postdoctoral Fellow**
    - University of Greenwich
    - February 01, 2012 - August 31, 2012

ASSISTANT PROFESSOR: Masood ur Rehman Kayani

- **Name:** Masood ur Rehman Kayani
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 0518865744
- **Introduction:**
    - Masood ur Rehman Kayani's current research primarily focuses on the role of the human microbiome in health and disease.
    - He is dedicated to developing improved methods for microbiome data analysis.
    - Specifically, his group is investigating the links between microbiome imbalances and conditions such as obesity, diabetes, and cancers, among others.
    - Their goal is to uncover novel connections and identify biomarkers for early diagnosis, treatment response, and personalized medicine.
    - Through their research, they aim to contribute to a deeper understanding of the complex interactions between the microbiome and human health, with the ultimate aim of improving disease diagnosis and treatment.
- **Academic Background:**
    - PhD (Bioinformatics)
        - Tsinghua University
        - September 17, 2012 - October 10, 2018

Experience

- **Assistant Professor**
    - Capital University Of Science and Technology (CUST)
    - November 15, 2022 - January 31, 2023
- **Belt and Road Young Scientist**
    - Xinhua Hospital, Shanghai, China
    - December 01, 2019 - September 30, 2022
- **International Exchange Postdoctoral Researcher**
    - Shanghai Institute of Immunology, School of Medicine, Shanghai Jiao Tong University
    - February 01, 2019 - May 29, 2021

ASSISTANT PROFESSOR: Umer Asgher

- **Name:** Umer Asgher
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 0515444447

Academic Background

- PhD (Artificial Intelligence and Brain-computer Interface)
    - National University of Sciences and Technology (NUST), Islamabad
    - September 08, 2014 - September 21, 2020

Experience

- **Assistant Professor**
    - College of Electrical and Mechanical Engineering (CEME), National University of Sciences and Technology (NUST)
    - September 15, 2021 - February 23, 2022
- **Adjunct Professor**
    - School of Mechanical and Manufacturing Engineering (SMME), NUST
    - December 04, 2020 - September 15, 2021
- **Manager Tech**
    - National Logistics Cell (NLC), Ministry of Planning, Development & Special Initiatives
    - February 17, 2018 - September 05, 2021
- **Temporary Visiting Faculty**
    - School of Art, Design and Architecture (SADA), NUST
    - February 01, 2015 - February 02, 2016
- **Major (Officer Technical Operations and Engineering Management)**
    - Ministry of Defence
    - October 07, 2004 - August 17, 2018

ASSISTANT PROFESSOR: Muhammad Munir Butt

- **Name:** Muhammad Munir Butt
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)

ASSISTANT PROFESSOR: Muhammad Waseem

- **Name:** Muhammad Waseem
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)

Adjunct Faculty:

Usman Zia

- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 0515121917

Academic Background

- PhD (Deep Learning NLP)
    - National University of Sciences and Technology (NUST), Islamabad
    - October 14, 2015 - November 29, 2022

Experience

- **Lieutenant Colonel**
    - General Headquarters (GHQ)
    - April 13, 2003 - April 29, 2023

LAB ENGINEER: Ume Rubab

- **Name:** Ume Rubab
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 0518865781

Academic Background

- MS (Computational Sciences and Engineering)
    - National University of Sciences and Technology (NUST), Islamabad
    - June 01, 2022 - June 01, 2024

Experience

- **Research Associate**
    - IAL, SINES
    - June 01, 2022 - August 30, 2023
- **Frontend Developer**
    - IAL, SINES
    - November 01, 2021 - April 30, 2022
- **NetSuite Developer**
    - Magna Food Services
    - March 01, 2021 - October 30, 2021

ASSISTANT PROFESSOR: Israr Ud Din

- **Name:** Israr Ud Din
- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 5190855726

Summary

Dr. Israr Ud Din is currently an Assistant Professor at RCMS, NUST, Pakistan. He received his PhD degree from (LTI), Université de Picardie Jules Verne, France. His area of research is composites.

Academic Background

- PhD (Composites Damage Modeling)
    - Université de Picardie Jules Verne
    - September 01, 2014 - November 30, 2018

Honours and Awards

- Silver Medal
    - BISE SWAT
- PhD Funding
    - PhD Scholarship
- PIEAS MS Fellowship
    - Fully Funded MS Fellowship for two years
    - July 01, 2006

Experience

- **Teacher Assistant**
    - University of Picardie Jules Verne
    - September 01, 2015 - October 30, 2018
- **Manager**
    - Advanced Engineering Research Organization (AERO)
    - October 30, 2008 - September 30, 2014

Lab Engineer: Hafiz Ali Haider Sehole

- **Department:** School of Interdisciplinary Engineering & Sciences (SINES)
- **Contact:** 0518865781

Summary

Hafiz Ali Haider Sehole is employed as a lab Engineer at the SINES computing facility. SINES hosts the supercomputing facility. His responsibilities include cluster machine management, installation, and troubleshooting. He is an experienced CFD person in the department. In addition to his HPC management skills, his research interests include combustion modeling, turbulence, and combustion engines.

Academic Background

- MSc (Applied Mechanics - Combustion Modelling)
    - National University of Sciences and Technology (NUST), Islamabad
    - September 11, 2017 - April 14, 2021

About SINES:

- **Establishment and Parentage:**
    - School of Interdisciplinary Engineering & Sciences (SINES) is a top-notch research institute, unique in the country, and is affiliated with the National University of Science and Technology Islamabad (NUST).
    - Established in 2007.
- **Supercomputing Facilities:**
    - Known for its supercomputing facilities, providing cutting-edge resources for technical studies.
    - SINES NUST's supercomputer has been listed among the top 500 supercomputers worldwide.
- **Multi-disciplinary Approach:**
    - Facilitated by an enabling environment, SINES fosters a multi-disciplinary approach to research and education.
- **Contributions to Socio-Economic Growth:**
    - Result-oriented research by faculty and students has significantly contributed to the socio-economic growth of the country.
- **Education Streams:**
    - Education, training, and research activities at SINES are divided into two main streams: Computational Sciences and Computational Engineering.
- **Encouraging Specialization:**
    - Students are encouraged and facilitated to engage in specialized topics with faculty members who are at the forefront of innovation in their fields.
    - Practitioners bring real-world, real-time experience to the classroom.
- **Shared Purpose:**
    - The SINES community is driven by a shared purpose: to make a better world through education, research, and innovation.

SINES VISION:

Vision Statement:

- To be renowned for interdisciplinary education and research in engineering and sciences.
- Commitment to the discovery and dissemination of knowledge.
- Development of technical, managerial, interpersonal, and communication skills.
- Contribution to the socio-economic growth of the country through innovative solution methodologies for problems in a variety of fields via modeling & simulation.

SINES MISSION:

- Provide excellent interdisciplinary wholesome education and research opportunities of modeling & simulation in engineering and sciences.
- Cater to students from diverse backgrounds.
- Employ competent faculty.
- Utilize adaptive mechanisms.
- Foster an enabling environment.
- Collaborate with various constituencies of society.

SINES Core Values:

- Integrity
- Innovation
- Teamwork

History and Establishment of SINES:

- **Establishment and Purpose:**
  - Established in 2007 at NUST.
  - Set up modeling and simulation facilities for design and development.
  - Aimed to integrate design and development efforts by government, academia, and industry.
  - Focused on cross-disciplinary research and educational programs.
  - Collaboration with industry and government.
- **Program Expansion:**
  - Initiated MS program in Computational Science and Engineering in Fall 2008.
  - Specializations in “Fluid Flow and Structures” and “Computational Infrastructures and Visualization”.
  - Extended to PhD in Computational Science and Engineering in Fall 2010.
  - Growth based on ten interrelated thrust areas focusing on mathematical modeling and simulation.
- **Additional Concentration Areas:**
  - Computational biology and drug design added as new concentration areas in MS and PhD in 2011.
- **Establishment of SCREC:**
  - Super Computing Research and Education Center (SCREC) established in 2012.
  - Houses supercomputing facility utilized for computation-intensive research in fluid dynamics and biosciences.
- **Division of Activities:**
  - Education, training, and research activities divided into two main streams or departments: Sciences and Engineering.
  - Sciences: Computer Science, Bioinformatics, Computational & Applied Mathematics.
  - Engineering: Engineering Sciences, Systems Engineering, Operations Research.
- **Why SINES?**
  - Ranked among world’s top universities and departments.
  - NUST ranked at number 400 in QS World University Ranking 2019.
  - Improved scores in academic reputation, citations per faculty, and faculty/student ratio.
- **Supercomputing Research and Education Centre (SCREC):**
  - Center of Excellence in High-Performance Computing.
  - Supports research and development efforts at NUST.
- **Learning Environment:**
  - Encourages involvement in specialized topics.
  - Faculty members at the forefront of innovation.
  - Practitioners bring real-world, real-time experience to the classroom.

SINES MAP:

Ground Floor:

Ground Floor A Wing (Left Side):

1. Principal Meeting Room
2. Kitchen
3. HoD BE Aerospace Professor Office - Dr. Riaz Ahmad
4. AD Administrator and Coordinator Admin Office
5. Admin Staff of BE Aerospace office
6. Senior AD Administrator and Coordinator Office - Kamran Akbar Khan
7. SINES Admin Staff office

Ground Floor A Wing (Right Side):

1. HoD SINES - Associate Professor Dr. Zartasha Mustansar Office
2. Principal and Dean's office
3. PA to Principal office
4. HoD Engineering Dr. Mian Ilyas Ahmad office
5. HoD Sciences Professor Dr. Fouzia Parveen Malik's Office

Ground Floor B Wing (Left Side):

1. Supercomputing lab
2. IT support office

Ground Floor B Wing (Right Side):

1. Conference Room
2. System Administrator office Makers Lab

Ground Floor C Wing (Left Side):

- Biomechanics Lab
- Aerostructure Lab
- Unoccupied Space
- Female Washrooms

Ground Floor C Wing (Right Side):

- Unoccupied Space

Ground Floor Central Area:

- Sitting Area For 15 people

Between A and B wings:

- Biometric Attendance

Between B and C wings:

- Aerial Robotics Lab

Between A and D wings:

1. Jazz 5G innovation Lab
2. Vending Machine

First Floor:

First Floor A Wing (Left Side):

1. Emergency Switch
2. Computing Lab 1 (Classes)
3. Computing Lab 2 (MS Research)

First Floor B Wing (Left Side):

1. Classroom 1
2. Classroom 3
3. Fire Hose

First Floor B Wing (Right Side):

1. Classroom 2
2. Classroom 4
3. Female Washroom
4. Male Washroom

First Floor C Wing (Left Side):

1. Thermodynamics Lab
2. Propulsion Lab

First Floor C Wing (Right Side):

1. Heat and Mass Transfer Lab
2. Aerodynamics Lab

First Floor D Wing (Left Side):

- Unoccupied Space

First Floor D Wing (Right Side):

1. Classroom 5
2. Classroom 6
3. Male Washroom

First Floor Central Area:

- Indoor Sports Facilities (Table Tennis, Billiard Board, Benches)

Between A and B Wings:

- NDRMF Reserved Space

Between B and C Wings:

- Girls Common Room and Lockers

Between C and D Wings:

1. Exam Section (Left Side)
2. Program Coordinator Section (Right Side)

Between A and D Wings:

1. Boys Common Room
2. Mosque

Second Floor:

Second Floor A Wing:

- Turkish Aerospace Industries Pakistan

Second Floor B Wing (Left Side):

1. Electrical and Electronics Lab (Bachelor of Aerospace Engineering)
2. Aerospace Engineering Department Library (Hours: Monday 9am-10am)

Second Floor B Wing (Right Side):

- Unoccupied Space

Second Floor C Wing:

- DreamBig Semiconductor Lab

Second Floor D Wing (Left Side):

1. Artificial Intelligence for Mechanical Systems Lab
2. GIS Mobility Lab (Headed by Associate Professor Dr. Muhammad Ali Tahir)

Second Floor D Wing (Right Side):

1. Image Analysis Lab (Headed by Associate Professor Dr. Tariq Saeed)
2. Washrooms (Industrial Use Only)

Second Floor Central Area:

- SINES Library
- Electric Vehicle Lab
- Seminar Hall 1

Between A and B Wings:

- Rapids AI Office

Between B and C Wings:

- Radar Research Lab (Principal Investigator: Dr. Hammad M Cheema)

Between C and D Wings:

- Data Analytics Lab (Headed by Assistant Professor Dr. Mehak Rafiq)

Between A and D Wings:

1. Computational Aeronautics Lab (Headed by Professor Dr. Adnan Maqsood and Associate Professor Dr. Ammar Mushtaq)

Third Floor:

Third Floor A Wing:

- USAID Universities: University of Utah, University of Alabama

Third Floor B Wing (Left Side):

- Nanoscience and Technology Lab 1 (Dr. Mohsin Saleem)

Third Floor B Wing (Right Side):

- Washrooms (Female & Male) - USAID HESSA Project Team Only

Third Floor C Wing:

- ARCELIK Islamabad R and D Center (AIRC)
- Dawlance
- Thermal and Energy Storage Technology (TEST) Lab

Third Floor D Wing (Left Side):

- XR HIVE (Dr. Shahzad Rasool)

Third Floor D Wing (Right Side):

- Design Lab of NUST Chip Design Center

Third Floor Central Area:

- Cove 3
- Cove 4
- Seminar Hall 2

Between Wings A and B:

- Advanced Integrated Energy Lab (USPCAS-E)

Between Wings B and C:

- System on Chip (SoC) Lab

Between Wings C and D:

- National Cyber Security Auditing and Evaluation Lab: Erasmus+ and Re:Cypher

Between Wings A and D:

1. Smart Agritech Lab
2. Adaptive Signal Processing Lab

Fourth Floor:

Fourth Floor A Wing:

- Offices of various faculty members

Fourth Floor Center:

- Meeting Room
- Visiting Faculty Room
- Two Printers

Fourth Floor B Wing (Left Side):

- Microfluidics Lab

Fourth Floor B Wing (Right Side):

- Reserved for MOOCs

Fourth Floor C Wing (Right Side):

- Resolve Office

Fourth Floor D Wing (Left Side):

- Unoccupied Space

Fourth Floor D Wing (Right Side):

- Studio (Reserved for MOOCs)

Fourth Floor Central Area:

- Auditorium Door 1
- Auditorium Door 2

Between Wings:

1. Unoccupied Space
2. Computational Drug Design Lab
3. Defense Research and Innovation Lab
4. Faculty Lounge

SINES LAB DATA:

Number of Labs:

- Total number of labs in SINES is 19 and 5 additional industrial labs.

Biomechanics lab

Location:

- Ground Floor, C Wing on the right side

General Introduction of the Lab:

- Focused areas: Gait analysis, sports biomechanics, and muscle mechanics

Lab Supervisor:

- Dr. Zartasha Mustansar

Department of Lab Supervisor:

- SINES

Current Projects:

- Gait analysis
- Sports biomechanics

Major Equipment:

- High resolution cameras
- Force plates

Students:

- Number of students working in the lab: 8

Computers:

- Number of PCs in the lab: 4

Data Analytics Lab

Location:

- **2nd floor between wings D and C**

General Introduction:

- **The lab works on projects related to Data Analytics and Big Data Analytics projects involving AI.**
- **The domain of interest ranges from Bioinformatics to Ecommerce and Smart Grid Power Generation Forecasting.**

Lab Supervisor:

- **Dr. Mehak Rafiq**

Department:

- **SINES**

Current Projects:

- **Smart Grid Power Generation Forecasting**
- **Cancer Genetics**
- **NGS**

Major Equipment:

- **Computer systems only**

Students:

- **Number of students working in the lab: 10**

PCs:

- **Number of PCs in the lab: 6**

Aero structure Lab:

Location:

- Ground Floor D wing left side

General Introduction:

- Undergraduate experiment lab for demonstration purposes.

Lab Supervisor:

- Dr. Munim

Department:

- SMME

Current Projects:

- None

Major Equipment:

- UTM (universal testing machine)
- Torsional testing machine
- Fatigue testing machine
- Impact testing machine
- Hardness tester
- F7 jet fighter engine
- Bending test machine
- Compression testing machine
- Tensile testing machine

Students:

- None except for undergraduate classes

PCs:

- Number of PCs in the lab: 2

Computational Aeronautics Lab:

Location:

- 2nd Floor Between wings A and D

General Introduction:

- Focuses on:
    - Aero-Flight Dynamics
    - Computational Fluid Dynamics
    - Designing and Control Systems of various aircraft (including jets, drones, and UAVs)

Lab Supervisors:

- Principal Investigator: Dr. Adnan Maqsood
- Co-Principal Investigator: Dr. Ammar Mushtaq

Department:

- SINES

Current Projects:

- None

Major Equipment:

- HPC Cluster
- Flight Simulator Seat
- 4x Quad Copters
- Ducted Fan Apparatus
- Insect Swarming Box

Students:

- Number of students working in the lab: 13

PCs:

- Number of PCs in the lab: 15

Smart Agri Tech Lab:

Location:

- 3rd floor between wings A and D

General Introduction:

- Focuses on integrating technology with agriculture and healthcare.
- Current projects include smart attendance systems, smart drones for agriculture, and explainable AI for healthcare.

Lab Supervisor:

- Dr. Shahzad Younis

Department:

- SEECS

Current Projects:

- Smart attendance systems with facial recognition
- Managing car registration with technology
- Smart drones for agriculture
- Explainable AI for healthcare

Major Equipment:

- 3D printer
- Various tools
- Soldering machine
- Temperature detector

Students:

- Number of students working in the lab: 10

PCs:

- Number of PCs in the lab: 8

Image Analysis Lab:

Location:

- 2nd floor, D wing Right side

General Introduction:

- Analyzes satellite imagery using machine learning to detect changes or anomalies.

Lab Supervisor:

- Dr. Muhammad Tariq Saeed

Department:

- SINES

Current Projects:

- Unclear project name (listed as "Serena Green")

Major Equipment:

- PCs and high-end workstations

Students:

- Number of students working in the lab: 7

PCs:

- Number of PCs in the lab: 7

Environment & Agriculture lab

Location:

- 4th floor, B wing Right side

General Introduction:

- Analyzes water and soil samples for various parameters including pH, electrical conductivity (EC), total dissolved solids (TDS), hardness, alkalinity, nitrates, phosphates, chlorides, nitrites, COD, BOD, and ammonia.

Lab Supervisor:

- Prof Dr. Muhammad Arshahd

Department:

- IESE

Current Projects:

- DCI Islamabad (project name unclear)

Major Equipment:

- Spectrophotometer

Students:

- Number of students working in the lab: 14

PCs:

- Number of PCs in the lab: 3

NUST Chip Design Centre Lab:

Location:

- 3rd floor, D wing Right side

General Introduction:

- The NUST Chip Design Centre (NCDC) Lab focuses on:
    - Training human resources for the IC (integrated circuit) industry in Pakistan.
    - Research and intellectual property (IP) production.

Lab Supervisors:

- Dr. Hammad M. Cheema
- Dr. Waqar Ahmad

Department:

- SINES

Current Projects:

- LDO
- EIT

Major Equipment:

- None

Students:

- Number of students working in the lab: 12

PCs:

- Number of PCs in the lab: 10

XR HIVE Lab:

Location:

- 3rd floor, D wing left side

General Introduction:

- Focuses on Virtual Reality (VR), Brain-Computer Interfaces (BCIs), and Haptics for innovative human-machine interaction.

Lab Supervisor:

- Dr. Shahzad Rasool

Department:

- SINES

Current Projects:

- VR aircraft simulator
- Gamified VR learning (chemistry)
- Haptics, BCIs, VR, and AI integration

Major Equipment:

- VR headsets
- Haptic devices
- Leap Motion controllers

Students:

- Number of students working in the lab: 10

PCs:

- Number of PCs in the lab: 11

Computational Drug Design Lab:

Location:

- 4th floor, Between wings C and B

General Introduction:

- The lab and its occupants work on computational drug design and related topics, including drug design, regulatory network studies, metagenomics analysis, and modelling and simulation.

Lab Supervisor:

- Dr. Ishrat Jabeen

Department:

- SINES

Current Projects:

- Drug design
- Regulatory network studies
- Metagenomics analysis
- Modelling and simulation

Major Equipment:

- Personal computers

Students:

- Number of students working in the lab: 15

PCs:

- Number of PCs in the lab: 15

Heat and Mass Transfer Lab :

Location:

- 1st floor, C wing right side

General Introduction:

- Undergraduate laboratory for Aerospace Engineering students enrolled in the heat and mass transfer course.
- Focuses on hands-on demonstrations of heat transfer modes.

Lab Supervisor:

- Muhammad Talha Yousaf

Department:

- SMME - Aerospace Engineering Department

Current Projects:

- None

Major Equipment:

- Thermal conductivity tester (liquids and gases)
- Linear heat transfer conduction unit
- Linear and radial heat transfer unit
- Cut-down models of 2-stroke and 4-stroke engines

Students:

- None except for undergraduate classes

PCs:

- Number of PCs in the lab: 1

Thermodynamics Lab:

Location:

- 1st floor, C wing left side

General Introduction:

- Undergraduate experiment lab for demonstration purposes in thermodynamics.

Lab Supervisor:

- Muhammad Talha Yousaf

Department:

- SMME - Aerospace Engineering Department

Current Projects:

- None

Major Equipment:

- Steam power plant with steam engine
- Mechanical heat pump machine
- Heat exchange service unit
- Marcet boiler
- Oxygen bomb calorimeter
- Pressure measurement bench
- Temperature measurement bench

Students:

- None except for undergraduate classes

PCs:

- Number of PCs in the lab: 2

Aerodynamics Lab:

Location:

- 1st floor, C wing right side

General Introduction:

- Supports undergraduate courses in Aerospace Engineering, specifically "Fundamentals of Incompressible Flows."
- Provides hands-on experience in fluid mechanics around various objects.

Lab Supervisor:

- Muhammad Talha Yousaf

Department:

- SMME - Aerospace Engineering Department

Current Projects:

- None

Major Equipment:

- Smoke tunnel
- Flight demonstration wind tunnel
- Air bench apparatus
- Fan performance equipment
- Laminar/turbulent fluid flow apparatus
- Fluid friction apparatus

Students:

- None except for undergraduate classes

PCs:

- 1

Radar Research Lab:

Location:

- 2nd floor, Between wings C and B

General Introduction:

- Focuses on research and development of radar systems.

Lab Supervisor:

- Dr. Hammad Cheema

Department:

- SINES

Current Projects:

- Radar detection for safe rails
- Portal (portable radar)

Major Equipment:

- FPGA board
- Software-defined radio (SDR)
- Radar antenna

Students:

- Number of students working in the lab: 4

PCs:

- Number of PCs in the lab: 16

AIMS (Artificial Intelligence for Mechanical Systems) Lab:

Location:

- 2nd Floor, D wing Left side

General Introduction:

- Focuses on applying artificial intelligence to mechanical systems.

Lab Supervisor:

- Dr. Muhammad Sajid

Department:

- SMME

Current Projects:

- Solar and wind energy forecasting

Major Equipment:

- Solar simulator
- HVAC chamber
- IoT devices

Students:

- Number of students working in the lab: 4

PCs:

- Number of PCs in the lab: 6

Biosensors and therapeutic Lab:

Biosensors and Therapeutic Lab

Location:

- 3rd floor, B wing Right side

General Introduction:

- Focuses on developing biosensors and drug delivery constructs.

Lab Supervisor:

- Dr. Shah Rukh Abbas

Department:

- ASAB

Current Projects:

- TB biosensor and ultrasound contrast agents

Major Equipment:

- Electrochemical set-up
- Ultrasound machine
- Centrifuge
- Fridge

Students:

- Number of students working in the lab: 10

PCs:

- Number of PCs in the lab: 0

Supercomputing Lab:

Location:

- Ground Floor B wing on the left side.

Function:

- Provides computer terminals for researchers to remotely access and run simulations on the SINES supercomputer.
- Offers dedicated training sessions on using the supercomputer for research purposes.

Capacity:

- Accommodates 20 researchers at a time.

Equipment:

- Primarily consists of computer terminals for remote supercomputer access.

MS Research Lab:

Location:

- 1st floor A wing Computing Lab 2

Function:

- Dedicated research space for Master's degree (MS) students at NUST.

Capacity:

- Current capacity: 60 research desks (expandable to 70)
- Each student receives a designated desk and locker.

Facilities:

- Access to top-notch research equipment (specific equipment not mentioned).
- Designed to foster a positive environment for learning and conducting research.

General Purpose Teaching Lab:

Location:

- 1st floor A wing Computing Lab 1

Function:

- Provides supplementary practical learning opportunities for SINES graduate students (MS and PhD).
- Primarily used for:
    - Teaching labs (although SINES itself doesn't offer credited teaching labs).
    - Hands-on training sessions on research software.
    - Hosting seminars and workshops.

Capacity:

- Accommodates 40 students at a time.

Equipment:

- Likely consists of general-purpose computers suitable for various software applications.

Immersive Interaction Lab

Location: (Missing information)

General Introduction:

- **Goals:**
    - Bridge the gap between real and digital worlds.
    - Create more immersive experiences through new forms of human interaction.
    - Utilize senses beyond sight and sound (touch, balance, etc.).
- **Focus:** Multimodal interaction for applications in various domains.
- **Examples:** Simulation, education, and training.

Research Areas:

- Virtual Reality (VR)
- Augmented Reality (AR)
- Mixed Reality (MR)
- Haptic Interaction
- Brain-Computer Interfaces (BCI)

Current Projects (Examples):

- Virtual reality for procedural memorization of general aviation checklists
- Understanding VR for asynchronous content delivery in chemistry education
- Game-induced emotion analysis using electroencephalography (EEG)
- Impact of haptic feedback on pilot performance during flight simulation
- Pseudo-haptic feedback for learning chemical bond strengths

Equipment:

- Specialized equipment for VR, AR, MR, and haptic interaction (details not provided)
- Computers (number not specified)

Industrial Labs:

Resolve Lab:

General Information:

- Year of Establishment: 2023
- Employees: 21

Expertise:

- AI Tech
- Compilation
- Automation and Sensor Conditioning
- Data Analytics
- Antenna Design

Work Culture:

- Fosters a supportive environment that values well-being, collaboration, and growth.

Achievements:

- Newly established company focusing on building a strong foundation.

Partnerships:

- Collaborations with external organizations including NESCOM, NECOP, and other private/public sectors.

Internship Program:

- Targets areas like AI Tech, Compilation, Automation and Sensor Conditioning, Data Analytics, and Antenna Design.
- Applicants can submit CVs in person or via email (resolve.contactus@gmail.com).

Internship Departments:

- AI Tech
- Compilation
- Automation and Sensor Conditioning
- Data Analytics
- Antenna Design (subject to availability)

Turkish Aerospace Industries (TAI) Lab:

General Information:

- Year of Establishment: 1973
- Employees: 36

Expertise:

- Aircraft design and manufacturing

Work Culture:

- Follows the same work ethics and culture established by the Turkish head office.

Achievements:

- Pakistani TAI office has made significant contributions to ongoing development programs in the past year.

Partnerships:

- Collaborates with PAF (Pakistan Air Force), Pak Army, NAVY, and NESCOM (National Engineering and Scientific Commission).

Internship Program:

- Offers internship opportunities at both the NUST office and the Ankara, Turkey headquarters (managed by the NUST placement office).
- Internship programs focus on engineering and business operations.

Additional Information:

- It is important to note that details regarding the application process and eligibility criteria for internships might be available through the NUST placement office website or by contacting them directly.

RapidsAI Lab:

General Information:

- Year of Establishment: 2022
- Employees: 7

Expertise:

- Machine Learning
- Computer Vision

Work Culture:

- Values diversity, respect, open communication, work-life balance, and employee development.

Achievements:

- Completed a project for Pfizer in collaboration with a team from New Zealand (details not provided).

Partnerships:

- Collaborates with multiple international organizations (specific names not available).

Internship Program:

- Offers internship opportunities in:
    - Machine Learning
    - Web Development
    - Android Development

Internship Departments:

- Machine Learning (primary focus)

DreamBig Semiconductor Lab:

General Information:

- Year of Establishment: 2022
- Employees: 40

Expertise:

- "MARS" Open Chiplet Platform for next-generation Large Language Models (LLMs), Generative AI, and Automotive Semiconductor solutions

Work Culture:

- Described as "Good" (more details might be available on the company website or job postings).

Achievements:

- Pioneered open chiplet technology for LLMs, Generative AI, datacenter, and automotive applications.

Partnerships:

- Multinational company (specific partners not mentioned).

Internship Program:

- Currently not offering internship programs (information might change in the future, so check the company website or contact them directly).

Additional Notes:

- The department that might typically host interns is SEECS (School of Electrical Engineering and Computer Science) based on the provided information. However, the absence of an official internship program makes it uncertain.

HESSA Lab:

General Information:

- Year of Establishment: 2021
- Employees: 10

Expertise:

- Training programs (details on specific training areas not provided)

Work Culture:

- Described as "Good" (more details might be available on the company website or job postings).

Achievements:

- Played a role in HEC (Higher Education Commission) policy reform (specific details not provided).

Partnerships:

- Collaborates with external organizations and industries (specific partners not mentioned).

Internship Program:

- Currently not offering internship programs (information might change in the future, so check the company website or contact them directly).