

ZAID MOHAMMAD SHAH

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Brief summary

I am the founder of TechNurture Labs (AI, Robotics, Coding and STEM Education provider.). I have a Ph.D. in Engineering (Nanotechnology) from Department of Electronics and Instrumentation Technology, University of Kashmir and M.Tech from Jamia Millia Islamia, New Delhi. I have 3 years of experience in research and over 3 years in teaching undergraduate Engineering students. I also have 14 months experience teaching online.

Professional experience

Present:

1. **Founder – TechNurture Labs** (Khalafa R & D Pvt. Ltd.) – AI, Robotics, Coding and STEM Education provider.
2. **Data Annotator** at e2f.inc since May 2024.

Past:

3. **Guest Faculty** at Department of Electronics and Communication Engineering, National Institute of Technology, Srinagar.
4. Sixteen months (March 2023 – Dec 2023, March 2024 – Sept 2024) as **Lecturer** (Contractual) in Department of Electronics and Communication Engineering, Institute of Technology, Zakura.
5. One Year and two months as **Academic Specialist** at BYJUs (Jan. 2022 to April 2023).
6. Three years (Oct 2017 – Aug 2020) as **Junior Research Fellow** in DST- SERB sponsored project titled “Development of Integrable, Electronically Tunable, Fractional Order Capacitor (FRACTANCE) and its Applications” in Department of Electronics and Instrumentation Technology, University of Kashmir.
7. Eighteen months (Apr 2016 – Oct 2017) as **Lecturer** (Contractual) in Department of Electronics and Instrumentation Technology, University of Kashmir.

Academic qualification data

2004 - High school examination passed through J&K Bose with Distinction

2006 - Higher secondary school examination passed through J&K Bose with 1st division.

2011 - Graduated in engineering (**B.E – E&C**) from University of Kashmir with 1st division.

2012 - Post Graduate Diploma in Embedded systems design (**PGDESD**) at CDAC, Noida.

2015 - Post graduation (**M.Tech**) completed in Nanotechnology from Jamia Millia Islamia, New Delhi with 1st division (honors).

2022 - **Doctorate** degree awarded in NanoTechnology from University of Kashmir.

2025 – IBM Data Science Professional Certificate (In Progress)

Technical Skills

- Software Tools: Jupyter Notebook, IDLE, Scratch, Microsoft Makecode Arcade, MIT App Inventor, MATLAB, Proteus, Python/C / C++ / Java programming, Microsoft Office Suite, Multisim, ATLAS TCAD, OrCAD, Verilog, Keil Microvision, Data fitting softwares and various Microcontroller Development suites, ROS 2.
- Operating Systems: Use and administration of Microsoft Windows (all versions) and Linux.

Journal, Conferences and Seminars Publications

- **ZM Shah**, MY Kathjoo, FA Khanday, K Biswas, C Psychalinos, “A survey of single and multi-component Fractional-Order Elements (FOEs) and their applications”, *Microelectronics Journal* vol. 84, (2019) 9-25.
- **ZM Shah** and FA Khanday, “Analysis of Disordered Dynamics in Polymer Nanocomposite Dielectrics for the Realization of Fractional-Order Capacitor”, *IEEE Trans. Dielect. Elect. Ins.* vol. 39, (2021) 243-252.
- **ZM Shah**, FA Khanday and ZA Jhat, “Packaged flexible planar copper foil fractional-order ‘0.61 – 0.87’ capacitors: Series/parallel combinations”, *Journal of Electronic Materials* vol. 52, (2023) 1829-1839.
- **ZM Shah** and FA Khanday, “MoS₂/graphene hybrid polymer composites as fractional-order capacitor dielectric”, *Proceedings of: ICNBL-2019, SKUAST-Kashmir*, April 15-19 2019.
- **ZM Shah**, FA Khanday and ZA Jhat, “A Novel Single-Component Fractional-Order Capacitor Based on Graphene Nanosheet/P (VDF) Composite: Synthesis and Analysis”, *Proceedings of: 2020 IEEE VLSI DCS*, 1-4.
- **ZM Shah**, SA Loan, “Breakdown enhancement of super-HFET using high-K passivation layers - A comparative analysis”. (doi: 10.3850/978-981-09-7519-7nbl16-rps-276).

Book Chapter:

- **ZM Shah**, FA Khanday and ZA Jhat, “Fabrication of Polymer nanocomposite based FOC: A guide”, *Fractional Order Systems: Mathematics, Design, and Applications for Engineers*, Springer 2021.
- GFA Malik, MA Kharadi, FA Khanday, **ZM Shah**, S Mittal, “Spin Transistors: Different Geometries and Their Applications”, *Emerging Applications of Low Dimensional Magnets*, 49-62.

Patents:

- Wind Powered adaptive traffic management system with split mounted vertical axis turbines, Publication date: 05/07/2024, App. No.: 202411047262A.

Workshops and Training

- 2010 - Five week on-site training in Transmission Lines and Maintenance Division (TLMD), PDD Sub Station Bemina.
- 2010 - Six week training program in Embedded C at STG Bangalore.
- 2012 - Six month diploma in Embedded systems design at Centre for development of advanced computing (CDAC), Noida.

2018 - Five day workshop in design and development of MOS capacitors - Nanoelectronics users program (INUP) at IIT Bombay.

2018 and 2020 - Attended five day Workshop on Fractional Order Systems twice, FOS-2018 and FOS-2020 at IIT Kharagpur.

In-Campus Projects

2011 - Submitted project titled “**Sonic Stick and Navigator using Microcontroller 8051** - Microcontroller based obstacle guidance system for the visually impaired people.” for completion of B.E. IT.

2012 - Submitted project titled “**I²C communication between two AVR microcontrollers**” for completion of PGDESD at CDAC, Noida.

2015 - Submitted M.Tech. Thesis titled “**Design and development of gallium nitride (GaN) based devices**”.

2016 - 2017 – Guided B. Tech. and M. Sc. (Electronics) students on projects “home automation system using Bluetooth”, “Development of arduino based impedance analyzers” and “Metaheuristic approach for optimization of PID controller parameters”.

2019 - Published Review paper about latest trends of modeling and design of Fractional-order elements for various fields of Engineering and Technology in Elsevier Journal. The survey has over 75 citations.

2020 - 2023 – Published two experimental papers about fabrication of Fractional-order capacitors in International Journals of IEEE and Springer.

2022 - Contributed a book chapter on the complete fabrication steps of Fractional order capacitors using simple and cost effective methods.

Achievements in Sports

2019 - Represented J&K state at Senior National Basketball Championship, Ludhiana.

2014 - North-Zone Inter-university basketball tournament - Participation.

2015 - All India Inter-university basketball tournament - Participation.

2015 - Jamia Millia Islamia Athletic meet: High Jump – Silver medal, 5000m race – Silver medal and (100x4) relay race – Bronze medal.

2015, 2016 and 2017 - Represented Srinagar District at Senior State Championship (Basketball), Jammu.

Personal Information

Date of Birth : July 14, 1988

Languages : English, Hindi, Urdu, Kashmiri.

Current Address : Wazir Bagh, Srinagar, Jammu and Kashmir, India.