Mudasir Ahmad Khanday

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Short Biography

Mudasir A. Khanday is an Assistant Professor in the Department of Electronics, specializing in nano devices, analog and digital circuits, and computational electronics. He holds a B.Tech degree in Electronics and Communication Engineering from Kurukshetra University, Haryana, India, and an M.Sc. degree in Electronics from the University of Kashmir, J&K, India. He got admission to the M.Sc. program through PG merit scholarship and was honored with the University Gold Medal for his outstanding academic performance. Mr. Khanday has qualified for various competitive exams, including UGC-NET (twice), UGC-JRF, GATE, and JKSET, as well as several PSU examinations such as NTRO and DRDO. He is currently pursuing a Ph.D. in Neuromorphic Computing at the University of Kashmir, under Senior Research Fellowship, University Grants Commission, Govt. of India. He has contributed to his field by publishing various papers in peer-reviewed international journals, including IEEE Transactions. He is also a reviewer of several reputed journals. His research interests include neuromorphic computing, in-sensor computing, nano devices, analog and digital architectures, and biosensing.

Education

University of Kashmir, Srinagar, J&K, India
Ph.D. Electronics (Neuromorphic Computing), (**Pursuing).**

University of Kashmir, Srinagar, J&K, India
M. Sc. Electronics, 2020. (CGPA 9.41/10), **(Gold Medal).**

Kurukshetra University, Kurukshetra, Haryana, IndiaB.Tech.
Electronics & Communication, 2016.

Scholastic Achievements

- University Gold Medal (2020).
- Qualified **UGC JRF June-2018** in Electronic Science.
- Qualified **UGC NET Dec-2018** in Electronic Science.
- Qualified **JKSET 2023** in Electronic Science.
- Qualified **GATE** in Electronics and Communication Engineering.
- Qualified **PSU Exams (NTRO, DRDO)** in Electronics and Communication Engineering.
- University PG Merit Scholarship.

Internship

National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh, India

- 2013
- Basic Electronics

Bharat Sanchar Nigam Limited (BSNL), Haryana, India

- 2017
- 3G Mobile Communication

National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh, India

- 2020
- Networking and IoT

Research Tools

- Cadence Virtuoso
- ATLAS TCAD
- TCAD Sentaurus
- Multisim
- Spice
- Verilog

Journal Publications

- **M. A. Khanday**, F. Bashir, and F. A. Khanday, "Single Germanium MOSFET-Based Low Energy and Controllable Leaky Integrate-and-Fire Neuron for Spiking Neural Networks," IEEE Transactions on Electron Devices, vol. 69, no. 8, pp. 4265-4270, Aug. 2022, doi: 10.1109/TED.2022.3186274.
- **M. A. Khanday**, F. A. Khanday, and F. Bashir "Single SiGe Transistor Based Energy-EfficientLeaky Integrate-and-Fire Neuron for Neuromorphic Computing," Neural Processing Letters, vol.55, pp. 6997–7007, Mar. 2023, doi: 10.1007/s11063-023-11245-w.
- **M. A. Khanday**, F. A. Khanday, F. Bashir, and F. Zahoor, "Exploiting Steep Sub-Threshold Swing of Tunnel FET for Energy-Efficient Leaky Integrate-and-Fire Neuron Model," IEEE Transactions on Nanotechnology, vol. 22, pp. 430-435, 2023, doi: 10.1109/TNANO.2023.3296557.
- **M. A. Khanday**, S. Rashid, and F. A. Khanday, "1T Spiking Neuron Using Ferroelectric Junctionless FET with Ultra-Low Energy Consumption of 24 aJ/Spike," Neural ProcessingLetters, vol. 55, pp. 11527-11539, Aug. 2023, doi: 10.1007/s11063-023-11387-x.
- **M. A. Khanday**, and F. A. Khanday, "A bio-inspired ferroelectric tunnel FET-based spiking neuron for high-speed energy efficient neuromorphic computing," Micro and Nanostructures,vol. 188, pp. 207788, Feb. 2024. doi: 10.1016/j.micrna.2024.207788.
- **M. A. Khanday**, and F. A. Khanday, "An energy-efficient tunable threshold spiking neuron with excitatory and inhibitory function," Int J Numer Model, vol. 37, no. 2, Feb. 2024, doi:10.1002/jnm.3227.
- **M. A. Khanday**, S. Rashid, and F. A. Khanday, "Energy efficient artificial gustatory system for in-sensor computing, Micro and Nanostructures," Micro and Nanostructures, vol. 191, May.2024. doi.org/10.1016/j.micrna.2024.207870.
- Shakeel, S. Rashid, F. A. Khanday, and **M. A. Khanday**, "Dielectrically modulated hetero-material double gate tunnel field-effect transistor for label free biosensing," International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, vol. 37, no. 2, Mar. 2024. doi: 10.1002/jnm.3232.
- B. Majid, **M. A. Khanday**, and F. A. Khanday, "SG-FET based spiking neuron with ultra-low energy consumption for ECG signal classification," International Journal of Numerical Modelling: Electronic Networks, Devices and Fields.

Conference Presentations

- **M. A. Khanday,** F. Bashir, and F. A. Khanday, "Energy-Efficient Single Transistor Neuron for Reconfigurable Threshold Logic and Image Classification," 2022 5th IEEE International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT), Aligarh, India, 2022, pp. 1-4, doi: 10.1109/IMPACT55510.2022.10029223.
- **M. A. Khanday**, and F. A. Khanday, " BTBT based Energy Efficient Artificial Spiking Neuron without External Circuitry," 2023 International Conference on Computational Intelligence and Biological Sciences (ICCIBS 2023)," Coimbatore, Tamil Nadu, India, Oct. 2023, pp. 329-332, ISBN: 978-93-5996-261-0.