

Aijaz H. Lone



Ph.D. Student, Electrical and Computer Engineering

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Research Interests: Neuromorphic Spintronics, Spin based logic, and memory

Aijaz H. Lone as part of the group from August- 2017 till June- 2020 completed his Master of Science (by Research) from SCEE. The focus of his work was on the modeling of spin transport and magnetization dynamics in spintronic devices (particularly the Magnetic Tunnel Junction). As part of his work, he also explored the area of neuromorphic computing devices. Currently, Aijaz is part of the Integrated Circuits and Systems Group (Computer, Electrical, and Mathematical Sciences and Engineering -CEMSE) KAUST, Saudi Arabia.

Education Profile

MS, Electrical and Computer Engineering (SCEE)

Indian Institute of Technology, (IIT) Mandi, India (2020)

Thesis: Effect of scaling on tunnel magnetoresistance and thermal stability in the magnetic tunnel junction

BTech, Electronics and Communication Engineering

Islamic University of Science and Technology (IUST) Kashmir (August- 2017)

Publications

Aijaz H. Lone et.al, “Cross-sectional Area Dependence of Tunnel Magnetoresistance, Thermal Stability and Critical Current Density in MTJ” *IEEE Transactions on Magnetics* (early access), 20 Nov 2020, <https://doi.org/10.1109/TMAG.2020.3039682>

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M G. Moinuddin, **Aijaz H. Lone**, Shivangi Shringi, Srikant Srinivasan, Satinder Sharma, “Low current density Magnetic Tunnel Junction for STT-RAM Application Using MgOxN1-x Tunnel barrier,” *IEEE Transaction on Electron Devices*, Vol. 67, No. 1, January 2020

<https://doi.org/10.1109/TED.2019.2954131>

M.G Moinuddin, **Aijaz H. Lone**, Srikant Srinivasan, Satinder Sharma, “Realization of Large Area CoFeB Based Magnetic Tunnel Junction for CMOS Compatible Device Application”, *ACS Appl. Electron. Mater.* 2019, 1, 11, 2268-2278

<https://doi.org/10.1021/acsaelm.9b00469>

Aijaz H. Lone, S. Amara, and Hossein Fariborzi, “Spike time-dependent plasticity-based spin neuromorphic computing for pattern recognition applications,” Under review in *AIP Advances* for possible publication in 2021 January edition.

Note: This work was presented as the poster presentation in MMM 2020, 2 Nov 2020 Session C5: SPIN INJECTION AND NEUROMORPHIC COMPUTING, **C5-08**.