Nadir Ali

G.P. Hostel, Indian Institute of Technology Roorkee
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Education

2016 – **Ph.D., Indian Institute of Technology Roorkee, India.**
Thesis title: *Electro-optic Switches Using Phase Change Material* $Ge_2Sb_2Te_5$.

2013 – 2015 **M.Sc. Physics, Jamia Millia Islamia (Central University), New Delhi, India**

2010 – 2013 **B.Sc. (Hons) Physics, Jamia Millia Islamia (Central University), New Delhi, India.**

Research Experience

- Design and simulation of photonic components using standard electromagnetic and thermal solvers (CST, COMSOL, IPKISS).
- Handling standard electronic-photonic characterization equipment (OSA, swept wavelength lasers, sampling oscilloscopes, lightwave component analyzers, electro-optic modulator, chip measurement setup, BERT, EDFA, etc.).
- Standard scientific and computing softwares (e.g. Matlab, Origin, Adobe Illustrator, Latex)

Research Publications

Journal Articles

1. **Ali, Nadir** & Kumar, R. (2019b). Mid-infrared non-volatile silicon photonic switches using $Ge_2Sb_2Te_5$ embedded in soi waveguide. *Nanotechnology*, *31*(11), 115207. doi:https://doi.org/10.1088/1361-6528/ab5a04

2. **Ali, Nadir** & Kumar, R. (2018b). Design of a novel nanoscale high-performance phase-change silicon photonic switch. *Photonics and Nanostructures - Fundamentals and Applications*, *32*, 81–85. doi:https://doi.org/10.1016/j.photonics.2018.10.007

Conference Proceedings

1. **Ali, Nadir** & Kumar, R. (2019a). Design and simulations of photonic switch using hybrid $Ge_2Sb_2Te_5$-silicon waveguides in mid-ir region. In *17th international conference on optical communications and networks (icocn2018)* (Vol. 11048, p. 1104836). International Society for Optics and Photonics.

2. **Ali, Nadir** & Kumar, R. (2019c). Tunable optical filter enabled by phase change material embedded in soi microring resonator. In *Jsap-osa joint symposia 2019* (). Optical Society of America. doi:http://www.osapublishing.org/abstract.cfm?URI=JSAP-2019-20a_E215_4

3. **Ali, Nadir** & Kumar, R. (2018a). Chip-scale mid infra-red photonic switch based on $Ge_2Sb_2Te_5$ incorporated in soi waveguide. In *Photonics - 2018 international conference on fiber optics and photonics* (SB1–C1). Photonics-2018.

4. **Ali, Nadir** & Kumar, R. (2018c). Mid infra-red directional coupler optical switch based on phase change material embedded in partially etched soi waveguide. In *Frontiers in optics / laser science* (JTu2A.102). Optical Society of America. doi:10.1364/FIO.2018.JTu2A.102

Skills

Languages	Strong reading, writing and speaking competencies for English and Hindi.
Softwares	CST Microwave Studio, Comsol, Luceda IPKISS, MATLAB, LaTeX, FORTRAN.
Misc.	Academic research, teaching, training.

Miscellaneous Experience

Awards and Achievements

2018 **Best Paper Award** for paper entitled 'Design and simulations of photonic switch using hybrid $Ge_2Sb_2Te_5$-silicon waveguides in mid-IR region' in ICOCN-2018 Conference, Zhuhai, China.

2016 **Fellowship Award** by Graduate Aptitude Test in Engineering (GATE), Ministry of Human Resource and Development India.

Certification

2018 **Gian Course** (High Speed Optical Transmitters for Optical Interconnects). Awarded by Ministry of Human Resource Development India and IIT Roorkee.

2017 **INUP Familiarization Workshop** on "Nanofabrication Technologies" at IIT Roorkee, Uttarakhand. Awarded by Center for Nano Science and Engineering IISC, Bengaluru, India.

References