



## Curriculum vitae: Dr. Vinay Kumar M

Assistant Professor  
Department of Physics  
K.L.E's R.L.Science Institute (Autonomous),  
Belagavi-590001  
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### Academic Qualifications:

- **Ph.D** from University of Mysore (2018).
- **KSET** ( Karnataka State Eligibility Test for Lecturer/Assistant professorship) qualified (2015).
- **M.Sc** - Physics (Nuclear Physics Specialization) from University of Mysore (2009).

**PhD Thesis Title:** “Influence of radiation induced defects on electronic properties of some semiconductor devices”

**PhD Supervisor:** Dr. S. Krishnaveni Associate Professor, DOS in Physics, Manasagangotri, UOM, Mysore.

### Current Positions:

- Deputy Controller of Examinations, K.L.E's R.L.Science Institute (Autonomous), Belagavi-590001.
- Chairman, Physical Society, K.L.E's R.L.Science Institute (Autonomous), Belagavi-590001.
- Nodal Officer AISHE, K.L.E's R.L.Science Institute (Autonomous), Belagavi-590001.

### Teaching Experience:

- Feb. 2010 to May 2011: Assistant Professor, Department of Physics, PES College of Science Arts and Commerce, Mandya-571401.
- Oct. 2014 to May 2019 : Assistant Professor, Department of Physics, Post graduate and Research Center, Bharathi College, Bharathinagara, Mandya Dist-571422.
- June 2019 to till date: Assistant Professor, Department of Physics, K.L.E's R.L.Science Institute (Autonomous), Belagavi-590001.

### Awards:

- Dec 2011- Nov 2012: J. R.F – IUAC Research Project, New Delhi.
- Dec 2012- Sep 2014: S. R.F – IUAC Research Project, New Delhi.

- **Best Poster Award for the paper** “30 and 60 MeV Boron Ion Irradiation Effects on Electrical Characteristics of Bipolar Transistor” , K. S. Krishna Kumar, C.M. Dinesh, Ramani, S.A. Khan, **M.Vinay Kumar**, S. Krishnaveni, B. Jayashree, **I<sup>st</sup> International conference on Physics of Materials and Material Based Device Fabrication**, 17<sup>th</sup> -19<sup>th</sup> January 2012, Shivaji University, Kolhapur, India
- **Secured Best Oral Presentation (III Place) Award for the paper**“Modification In Electrical Properties Of Silicon Photo-Detector Due To 100MeV Si <sup>7+</sup> Ion Irradiation” at National conference on Solar Energy and its Application (NCSEA2013) on 9th April 2013 at Maharani's science college for women, Bangalore-560001

### **Research Interests:**

Reliability Studies in Semiconductors, Ion beam induced modifications, Defects in semiconductors, Fabrication of Semiconductor devices and simulation studies.

### **Papers Presented in National/International symposia/conferences:**

1. 60 and 100 MeV Oxygen Ion Irradiation Effects on Electrical Characteristics of Bipolar Transistor, K. S. Krishakumar, C.M. Dinesh, Ramani, **M. Vinay Kumar**, S. Krishnaveni, M. C. Radhakrishna, B. Jayashree International Workshop on the Physics of Semiconductor Devices, Dec.19-22,2011. IIT Kanpur, Kanpur India.
2. Effect of 100MeV oxygen ion irradiation on silicon NPN power transistor, **M. Vinay Kumar**, K. S.Krishnakumar, C.M.Dinesh, S.Krishnaveni Ramani,56<sup>th</sup> DAE SSPS, 19–23 December 2011, SRM University, Kattankulathur, Tamilnadu, India.
3. **Best Poster Award for the paper** “30 and 60 MeV Boron Ion Irradiation Effects on Electrical Characteristics of Bipolar Transistor” , K. S. Krishna Kumar, C.M. Dinesh, Ramani, S.A. Khan, **M.Vinay Kumar**, S. Krishnaveni, B. Jayashree, **I<sup>st</sup> International conference on Physics of Materials and Material Based Device Fabrication**, 17<sup>th</sup> -19<sup>th</sup> January 2012, Shivaji University, Kolhapur, India.
4. “Effect of 60 MeV Boron Ion Irradiation on Silicon NPN Power Transistor”, **M. Vinay Kumar**, K. S. Krishnakumar, C.M. Dinesh, B. Jayashree, Ramani, S. Krishnaveni, **I<sup>st</sup> International**

conference on Physics of Materials and Material Based Device Fabrication, 17<sup>th</sup> -19<sup>th</sup> January 2012, Shivaji University, Kolhapur, India.

5. **Secured Best Oral Presentation (III Place) Award for the paper** “MODIFICATION IN ELECTRICAL PROPERTIES OF SILICON PHOTO-DETECTOR DUE TO 100mev Si<sup>7+</sup> ION IRRADIATION” at National conference on Solar Energy and its Application (NCSEA2013) on 9th April 2013 at Maharani's science college for women, Bangalore-560001
6. “A Comparative study of 30MeV Boron4+ and 60MeV Oxygen8+ ion irradiated Si NPN BJTs”, **M. Vinay Kumar**, T. Yashoda, C. M. Dinesh, B. Jayashree, Ramani, S. Krishnaveni, DAE-SSPS 2014, VIT Vellore, Tamilnadu, India.
7. “Insitu Current transport studies on 100MeV Oxygen ion irradiated Si Photodetector”, **M. Vinay Kumar**, Shammi Verma, K Asokan, T. Yashoda, B. Jayashree, Ramani, S. Krishnaveni, DAE-SSPS 2014, VIT Vellore, Tamilnadu, India.
8. **M.Vinay Kumar**, Santosh Kumar, T.Yashoda and S.Krishnaveni “SHI induced damage in Electrical properties of silicon NPN BJT’s” 60th DAE -SSPS 2015.
9. Santosh Kumar, **M Vinay Kumar**, Manjunatha Pattabi, Asokan K, B. N. Chandrashekar, Cheng chun & S Krishnaveni “Effect of Gamma irradiation on Electrical Properties of CdTe/CdS Solar Cells”, International Conference on Advances in Science and Engineering, January 20-22, 2017, Bangkok, Thailand. (in process of publication Elsevier – Materials today Proceedings)
10. Santosh Kumar, **M Vinay Kumar**, Manjunatha Pattabi, Asokan K, Xavier, Nini, Martin and S Krishnaveni “Gamma irradiation effects on Electrical Properties of CdTe/CdS Solar Cells” International Symposium on Advanced Materials for Engineering Applications (ISAMEA-2017), March 24-25, 2017, NIE Mysuru.
11. **M. Vinay Kumar**, Santosh Kumar, S. Madan Kumar, K. Byrappa, S. Krishnaveni, S.P. Karanth, V. Shobha, and k asokan “Electrical characteristics of 100MeV O7+ Ion Beam irradiated Si Photo detectors National Conference on particle accelerators in interdisciplinary research (pair), April 11-13, 2017, Department of Physics, Mangalore University, Mangalagangothri-574199 Mangalore, Karnataka.
12. Santosh Kumar, **M Vinay Kumar**, Manjunatha Pattabi, Asokan K, Xavier, Nini, Martin & S Krishnaveni, “Effect of high dose Gamma irradiation on Electrical Properties of CdTe/CdS Solar

Cells” National Symposium on Nano Science and Technology (NSNST-2017), 02-Jul-2017 to 04-Jul-2017, IISc Bangalore, Karnataka.

13. Santosh Kumar, **M Vinay Kumar**, Asokan K, & S Krishnaveni “Effect of high dose Gamma irradiation on Electrical Properties of GaAs infrared emitting diode (IRED)” National Conference on Science and Technology-Reaching the Unreached-Recent advances in Physical, Chemical, Mathematical and Biological Sciences for Energy, Health and Environment, 8<sup>th</sup>–9<sup>th</sup>September, 2017, Mangalore University, Mangalagangothri-574199 Mangalore, Karnataka.
14. Santosh Kumar, **M Vinay Kumar**, Asokan K, & S Krishnaveni “Effect of High Dose Gamma Irradiation on Electrical Properties of commercial GaN and GaAs based Optoelectronic Devices” National Seminar on “Recent Trends in Physics (NSRTP-2017), 26 September 2017, Bharathi College Mandya, Karnataka.

### **Research Papers in International Peer reviewed journals:**

1. **Vinay Kumar, M.**, Verma, S., Shobha, V., Jayashree, B., Kanjilal, D., Ramani, R., & Krishnaveni, S. (2014). 100 MeV Si<sup>7+</sup> Ion Irradiation Induced Modifications in Electrical Characteristics of Si Photo Detector: An In-Situ Reliability Study. *Journal of Materials Science Research*, 3(3), 24.
2. **Vinay Kumar, M.**, Verma, S., Asokan, K., Shobha, V., Karanth, S. P., & Krishnaveni, S. (2016). In Situ electrical characteristics of 150 MeV Ag<sup>9+</sup> Ion Beam induced damage in Si photo detector. *ECS Journal of Solid State Science and Technology*, 5(7), P384-P388.
3. **Vinay Kumar, M.**, Santosh kumar., Chun Cheng., Asokan, K., Shobha, V., Karanth, S. P., & Krishnaveni, S. (2017). Influence of High Dose Gamma Irradiation on Electrical Characteristics of Si Photo Detectors. *ECS Journal of Solid State Science and Technology*, 6(10), Q132-Q135.
4. **Vinay Kumar, M.**, Krishnakumar, K. S., Dinesh, C. M., Krishnaveni, S., & Ramani. (2012, June). Effect of 100 MeV oxygen ion irradiation on silicon NPN power transistor. In *AIP Conference Proceedings* (Vol. 1447, No. 1, pp. 1085-1086). AIP Publishing.
5. **Vinay Kumar, M.**, Yashoda, T., Dinesh, C. M., Krishnakumar, K. S., Jayashree, B., Ramani, & Krishnaveni, S. (2015, June). A comparative study of 30MeV boron<sup>4+</sup> and 60 MeV oxygen <sup>8+</sup> ion irradiated Si NPN BJTs. In *AIP Conference Proceedings* (Vol. 1665, No. 1, p. 120039). AIP Publishing.

6. **Vinay Kumar, M.**, Kumar, S., Yashoda, T., & Krishnaveni, S. (2016, May). SHI induced damage in electrical properties of silicon NPN BJTs. In *AIP Conference Proceedings* (Vol. 1731, No. 1, p. 120031). AIP Publishing.
7. Santosh Kumar, **Vinay Kumar M.**, ManjunathaPattabi, Asokan K., Xavier, Nini, Martin, ChandrashekarB. N., Cheng Chun, Krishnaveni S. Effect of Gamma Irradiation on Eelectrical properties of CdTe/Cds Solar cells. *Proceedings of Materials Today*, 5, P22570-75, 2018.
8. Santosh Kumar, **Vinay Kumar M**, Srinivas R. N., Krishnaveni S. Electrical characterization of Ni/nGaN Schottky diodes, *IEEE Digital Library*, P356-358, ISBN 978-93-5291- 953-6, 2018.
9. Krishnaveni Sannathammegowda Santosh Kumar, Xiang Zhang , **Vinay Kumar Mariswamy** , Varra Rajagopal Reddy , Asokan Kandasami , Arun Nimmala , S V S Nageswara Rao , Jue Tang, Seeram Ramakrishna. Medium Energy Carbon and Nitrogen Ion Beam Induced Modifications in Charge Transport, Structural and Optical Properties of Ni/Pd/n-GaN Schottky Barrier Diodes. *MDPI, Materials*, 13(6), 1299, 2020.
10. Santosh Kumar, **Vinay Kumar M**, and Krishnaveni S. Fabrication and analysis of the current transport mechanism of Ni/n-GaN Schottky barrier diodes through different models *Semiconductors, Springer*,169–175, 54 (2020).

### Technical Skills:

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|-------------------|---|------------------------------------|
| Operating Systems | ⇒ | Dos, Linux, Windows 9x/ 2000/ Xp/7 |
| Languages         | ⇒ | C                                  |
| Packages          | ⇒ | MS-office, Latex, Beamer           |

### Membership in Professional bodies:

- Life Member - Indian Association of Physics Teachers.

Dr Vinay Kumar M

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