

Curriculum vitae

Dr. VIVEK ASHOK RANE

Assistant Professor,
Department of Physics
G. M. Vedak College of Science,
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EDUCATIONAL QUALIFICATIONS:

Ph. D. in Physics

April 2013, University of Pune, India

Thesis topic: Investigation into LTCC Compatible Ferrite Materials for Integrated Devices

Research Adviser: Dr. Girish J. Phatak, (C-MET, Pune)

M.Sc. in Physics (First class)

University of Pune, India [2001 –2003]

Thesis topic: Energetics of Coronal Mass Ejection

Thesis Adviser: Dr. Prasad Subramanian, (IUCAA, Pune), *now at IISER, Pune*

B.Sc. in Physics (First class)

University of Pune, India [1998 –2001]

COURSES TAUGHT:

- *Classical Mechanics*
- *Quantum Mechanics*
- *Atomic and Molecular Physics*
- *Solid State Physics*
- *Nuclear Physics*

RESEARCH INTEREST:

- *Physics of solid-state materials*
- *Electronic packaging*
- *Integrated electronic components and circuits*
- *Low temperature cofired ceramic (LTCC) technology*
- *Materials (magnetic/ dielectric) for electronic packages*
- *Physical and electrical characterization techniques*

RESEARCH HIGHLIGHTS:

- Prototype development of *ferrite materials and paste* for multilayer ceramic (MCM) technology
- More than 9 years experience at applied research level.... Drive to take several projects from concept to completion.....*Developed various LTCC devices for DRDO, ISRO, BARC etc. under various developmental projects operated in electronic packaging group at C-MET*
- Proven capability to work hands-on on innovative R&D projects involving multiple sophisticated techniques and real-world applications

EXPERIENCE: Research 9+ years, Academics 4 year

- Lecturer, Mahatma Phule College, Pune (July 2003 – March 2004)
- Senior Research Fellow, C-MET, Pune (Sept. 2007 - April 2013)
Project Staff, C-MET, Pune (August 2006 – May 2007)
Project Staff, C-MET, Pune (April 2004 – July 2006)
 - Development of multilayer electronic devices for high frequency, sensor etc. applications
 - Planning and executing complex experiments, and interpreting the data
 - Device and materials characterization at basic and application level
 - Scientific drafting (prepared research publications, yearly project reports, project closure reports etc.)
 - Independently handled specification designing to complete installation of various high-end research equipment
 - Upheld Class 10,000 Clean room and process/characterization equipments
- Assistant Professor, G. M. Veda College of Science, Raigad (January 2014 - onwards)

OVERALL PUBLICAITONS AND PRESENTATIONS:

- 5 Peer-reviewed journal publications
- 10 conference (international, national) papers
- 1 Invited, 2 Contributed, and 2 Institute-wide talks
- 1 Book Chapter

PUBLICATIONS SINCE JANUARY 2014:

- ***Materials for Embedded Capacitors, Inductors, Non-reciprocal devices and Solid Oxide Fuel cells in Low Temperature Co-fired Ceramic (LTCC)***
by Vivek Rane, Varsha Chaware, Shrikant Kulkarni, Siddharth Dattagupta, Girish Phatak,
Book title - *Micro and Smart Devices and Systems, Chapter 17, pp. 285-301 (2014)*
Springer, (Series - Springer Tracts in Mechanical Engineering), ISBN: 978-81-322-1913-2;
doi: [10.1007/978-81-322-1913-2_17](https://doi.org/10.1007/978-81-322-1913-2_17)
- ***(CoZn)₂-Z hexaferrite material for fabrication of integrated inductors in LTCC technology***
by Rane, V.A. & Phatak, G.J.
Journal - *ISSS J Micro Smart Syst* (2017).
doi: [10.1007/s41683-017-0007-x](https://doi.org/10.1007/s41683-017-0007-x)
- ***(CoZn)₂-Z hexaferrite material for fabrication of integrated inductors in LTCC technology***
V. A. Rane, G. J. Phatak; 7th International conference on Smart Materials Structures and Systems (ISSS-2014), IISc, Bangalore, India, during July 8-11, 2014.
Book Chapters:
- ***An Overview of Low Temperature Cofired Ceramic (LTCC) Technology and Special Processes in LTCC***
by V. A. Rane, V. A. Chaware, Shrikant G. Kulkarni, Vijaya D. Giramkar, S. Joseph,
Book title - *"Thin Film Technology and it's Novelties in Material Science", Chapter 19, Pg. 129-137, April 2022, Bhumi Publishing, ISBN: 978-93-91768-93-5;*
- ***A Brief Review on Synthesis of Ferrites***
by V. A. Rane, Vijaya D. Giramkar, S. Joseph,
Book title - *"Advances in Material Science: Characterization and Applications", Chapter 10, Pg. 138-151, August 2022, SEAMBooks, ISBN: 978-81-957290-1-2*
- ***A Brief Review on the Characterization of Ferrites***
by V. A. Rane, Vijaya D. Giramkar, S. Joseph,
Book title - *"Advances in Material Science: Characterization and Applications", Chapter 12, Pg. 160-174, August 2022, SEAMBooks, ISBN: 978-81-957290-1-2*

- **Simulation of Thermal Conductivity of Nanofluids based on Classical Model**
by Vijay S. Raykar, Vivek A. Rane and Parshuram B. Abhange
Book title - "Advances in Science and Technology Volume II", Chapter 20, Pg. 147-150, April 2023, Bhumi Publishing, ISBN: 978-93-88901-41-3;
- **A commentary on Characterization of Ferrites**
by Vivek A. Rane, Vijay S. Raykar, and Parshuram B. Abhange
Book title - "Advances in Science and Technology Volume IV", Chapter 16, Pg. 133-138, May 2023, Bhumi Publishing, ISBN: 978-93-88901-52-9;
- **A Brief Review on the Synthesis Methods of Ferroelectric Materials**
by Parshuram B. Abhange, Vijay S. Raykar, and Vivek A. Rane
Book title - "Research Trends in Material Science", Chapter 10, Pg. 81-88, September 2023, Bhumi Publishing, ISBN: 978-93-88901-83-3;

EXTRA-CURRICULAR RESPONSIBILITIES HANDLED:

- **Jan 2014 – May 2018**
 - In-charge of Alumni, Science Association and Research Committee
 - Member of Cultural Committee, Discipline Committee
- **June 2018 – May 2023**
 - NSS Programme Officer, In-charge of Discipline Committee
 - Member of IQAC, Attendance, Prospectus, Remedial Coaching, Study tour, RUSA Committee
- **June 2023 – onwards**
 - In-charge of Discipline Committee, Avishkar Research Convention
 - Member of National Service Scheme, IQAC, Staff club, Study tour, Academic Planning, Feedback, Remedial coaching committee

(Vivek A. Rane)