

Dr. Rajesh C. Malan

DESIGNATION Head, Applied Science and Humanities
Department and Assistant Professor in
Physics

RESEARCH INTEREST Theoretical and Computational
Condensed Matter Physics
Pseudopotential Theory
Liquid Alkali Metals and Their Alloys:

- Phonon dispersion studies
- Electrical Transport
- Thermodynamical Properties
- Velocity Autocorrelation

Superconductivity in Metals and Alloys
Bulk Metallic Glass (BMG)



EXPERIENCE 14 YEARS

CONTACT INFORMATION Room No B 202, Admin Block,
Government Engineering College,
Near Sanskar Kendra, College Road,
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APPONTMENT:

Government Engineering College, Valsad
Assistant Professor (GES CL II) 2011-Present

Government Polytechnic, Valsad
Adhoc lecture 2008-2011

EDUCATION :

Ph. D. Feb -2021
Gujarat Technological University, Ahmedabad

B.Ed. May-2008
Saurashtra University, Rajkot

M. Sc. in Physics May-2007
Saurashtra University, Rajkot

B. Sc. in Physics May-2005
D. K. V. Arts and Science College, Jamnagar

SKILLS AND KNOWLEDGE:

→ Fortran, LAMMPS, OVITO

TRAINING / WORKSHOP /CONFERENCE ATTENDED :

Conferences

R. C. Malan* and A. M. Vora, Structure studies of alkaline-earth metals using hard sphere approximation, National conference on recent trends in Science of material (NCSM-2K15), The M. S. University Baroda. 28th -30th December, 2015.

R. C. Malan* and A. M. Vora, *Structural Study of some liquid alkali metals*, XXX Gujarat science congress 2016, KSKV Kachchh Uni. Bhuj, 6th – 7th February, 2016.

R. C. Malan* and A. M. Vora, *Structural properties of some liquid alkali metals and effect of correction functions*, 6th International Science Congress (ISC-2016) Hutatma Rajguru Mahavidyalaya, Rajgurunagar, Pune, 8th -9th December, 2016.

R. C. Malan* and A. M. Vora, *Screening Dependence Study of Electronic Structure of Liquid Alkali Metals*, Gujarat Science Congress 2017 on PDP, Gandhinagar. 4th -5th February, 2017.

R. C. Malan* and A. M. Vora, *Thermodynamical study of Some simple Metals in Liquid State*, National seminar on Recent Trends in Experimental Condensed Matter Physics (RTECMP - 2017), Saurashtra University, Rajkot. 21st March-2017.

R. C. Malan* and A. M. Vora, *Electrical Resistivity of Liquid Na-Alkali Alloy*, 2nd International conference on Condensed matter and Applied Physics. Government Engineering College, Bikaner, 24th – 25th November, 2017.

R. C. Malan* and A. M. Vora, *Electrical Transport properties of Liquid $Li_{1-x}Cs_x$* , National Conference on Recent Innovations in Sciences (NCRIS- 2018), R. K. University, Rajkot, 19th –20th January, 2018.

R. C. Malan* and A. M. Vora, *Thermodynamical Investigation of Liquid $Li_{1-x}K_x$ Alloy*, National Conference on Advanced Material and Nanotechnology (AMN-2018), Noida-Delhi, 15th – 17th March, 2018.

R. C. Malan* and A. M. Vora, *Thermodynamical Investigation of Liquid $K_{1-x}Rb_x$ Alloy*, National Conference on Materials and Devices (NCMD-2018), Sharda University, Greater Noida- Delhi, 31st July-1st August, 2018.

A. M. Vora and R. C. Malan* *Vibrational Dynamics of $Pd_{39}Ni_{10}Cu_{30}P_{21}$ Bulk Metallic Glass*, National Conference on Materials and Devices (NCMD-2018), Sharda University, Greater Noida- Delhi, 31st July-1st August, 2018.

R. C. Malan* and A. M. Vora, *Electrical Transport in Binary Alloy*, Recent Advances in Material Science, Faculty of Science, The M. S. University of Baroda, Vadodara, 23rd –24th November-2018.

R. C. Malan* and A. M. Vora, *A Variation Approach for Thermodynamical Investigation of Liquid $K_{1-x}Rb_x$ Alloy*, National Research Scholar meet on condensed Matter and Material Science Department of Physics, Gujarat University, Ahmedabad, 8th December, 2018.

R. C. Malan and A. M. Vora, *Liquid $Na_{1-x}K_x$ Alloys: A Thermodynamical Investigation*, G. T. U. Icon -2019, G. T. U. Ahmedabad. 16th March, 2019.

R. C. Malan* and A. M. Vora, *Study of liquid $K_{1-x}Rb_x$ alloys through variational approach*, International Conference on Molecular Structure & Instrumental Approaches, 26th -27th November-2020, R. K. University, Rajkot.

Trainings

- STTP on Computational Software MATLAB & MATHEMATICA, SVNIT, Surat. 05/10/2020 to 09/10/2020
- FDP on Physics, GTU, Ahmedabad 21/09/2013
- Karmyogi Training for quality Improvement, Organized by Directorate of Technical Edu. Gandhinagar 06/12/2013 to 08/12/2013
- STTP on Thin Films and Vacuum Technology, SVNIT, Surat 09/12/2013 to 13/12/2013
- STTP on Intellectual Property rights and Information. Act. Narmada Colleege of Comp. App. Bharuch 10/03/2014 to 14/03/2014
- Induction Phase I, NITTTR Bhopal 21/07/2014 to 01/08/2014
- STTP on Matlab and GIS, G. P. Gandhinagar 27/04/2015 to 08/05/2015
- Induction Phase II, NITTTR, Bhopal 07/09/2015 to 18/09/2015
- STTP on Technology Enabled Learning, NITTTR, Bhopal 27/06/2016 to 01/07/2016
- STTP –HTMST-2016, SVNIT, Surat 14/07/2016 to 24/07/2016
- FDP on Physics, KCG, Ahmedabad 01/01/2018 to 06/01/2018
- MOOC FDP Leadership and Team Effectiveness Jan-2023 to April 2023

PROFESSIONAL MEMBERSHIPS:

Life Member, Indian Society for a Technical Education

PORTFOLIOS:

NISP, Coordinator	2021-Present
SSIP, Core Committee	2019-Present
IIC President	2021-Present
ARIIA coordinator	2021-Present
GTU 100 point activity for student	2019-Present
Eco Club member	2020-Present
Media coordinator	2021-Present
Public Information Officer	2022-Present

PUBLICATION (PAPERS/BOOKS):

Published

1. R. C. Malan, A. M. Vora, Electrical resistivity of liquid Na-alkali alloys, AIP Conf. Proc. **1953** (2018) 140014. (SCOPUS Indexed Journal)
2. R. C. Malan, A. M. Vora, (2018) A screening dependence study of liquid alkali metals, In Advances chemistry research Vol 42, Ed. J. C. Taylor, New York: Nova Sci. Pub. Inc. (Book Chapter)
3. R. C. Malan and A. M. Vora, Electrical Transport properties of Liquid $\text{Li}_{1-x}\text{Cs}_x$, International Journal of Scientific Research and Review, **7**(1) Supp. (2018) 385. (UGC Approved Journal)
4. R. C. Malan, A. M. Vora, Electrical transport properties of $\text{Li}_{1-x}\text{Na}_x$ alloys, J. Nano–Electronic Phys. **11** (2019) 01004. (SCOPUS Indexed Journal)
5. R. C. Malan, A. M. Vora, Thermodynamical proeprties of liquid $\text{K}_{1-x}\text{Rb}_x$ alloys, Mater. Today: Proc. **12** (2019) 671. (SCI and SCOPUS Indexed)
6. R. C. Malan, A. M. Vora, Thermodynamical investigation of liquid alkali metals with Gibbs-Bogoliubov method, J. Nano-Electronic Phys. **10** (2018) 03020. (SCOPUS Indexed Journal)
7. R. C. Malan, A. M. Vora, Thermodynamical investigation of liquid $\text{Li}_{1-x}\text{K}_x$ alloys, AIP Conf. Proc. **2009** (2018) 020052. (SCOPUS Indexed Journal)

8. R. C. Malan, A. M. Vora, Study of collective motion in liquid alkali metals, *Bul. Mater. Sci.* **42** (2019) 139. (SCI and SCOPUS Indexed)
9. A. M. Vora, R. C. Malan, Vibrational Dynamics of Pd₃₉Ni₁₀Cu₃₀P₂₁ Bulk Metallic Glass, *Mater. Today: Proc.* **12** (2019) 549. (SCI and SCOPUS Indexed)
10. R. C. Malan, A. M. Vora, Investigation of dynamical properties of liquid alkali metals, *Phys. Chem. Liq.* **58** (2020) 222. (SCI and SCOPUS Indexed).
11. H. P. Dave, R. C. Malan, A. M. Vora,, Screening dependence of superconducting state parameters of 4d-and 4f- metal based binary alloys, *Acta Phys. Pol. A* 133 (2018) 86. (SCI and SCOPUS Indexed)
12. R. C. Malan, A. M. Vora, Investigation of some basic thermodynamical properties of Na-K alloys, *Bibechana*, 2 (2021) 1.
13. R. C. Malan, A. M. Vora Study of Liquid K_{1-x}Rb_xAlloy through Variational Approach, *East Eur. J. Phys.* In press (SCOPUS Indexed Journal)
14. R. C. Malan, A. M. Vora, On the Effect of Aluminium on Phonon Dispersion Relation and other Properties of Bulk Metallic Glass Ca₇₀Mg₃₀, *Physica B: Phys. Condens. Matter.* (SCOPUS).
15. R. C. Malan, A. M. Vora, Study of Superconducting State Parameters of Alkali Metals, Nova Science Publisheres, NewYork: 2023 (**Book Chapter**)

Expert lectures / workshop organized/Delivered:

- ➔ Innovation and Opportunities for Sustainable Development at K. B. S. Haria Commerce College and Natraj Professional Science College, Vapi on 07th July, 2022.
- ➔ Innovation, Creativity and startup at University, organized by ITM vocational University, Vadodara, 28-06-2021.
- ➔ Facilities and Activities of Incubation center G.E.C Valsad, during the online Boot camp for School Children, 04-06-2020
- ➔ Atal Innovation Yojna and various important schemes for school students during the online Boot camp for School Children, 06-06-2020.
- ➔ Online expert lecture for the celebration of Dr. Vikaram Sarabhai's birth Anniversary) on 14th August, 2020 arranged by District Science Centre, Dharampur, He has

delivered his talk on "Dr. Vikram Sarabhai -100 Varsh Safalatana". The lecture was attended by 100 plus School teachers of Valsad district.

- Expert talk on National Science Day -2021 to the students and teachers of primary schools. The lecture was organized by District Science Centre Dharampur to develop the scientific and innovative thinking in the students and faculties of the schools.

SUBJECT TAUGHT:

Physics (3110011/18, 2110011)

Basics of Remote Sensing and GIS (3151308)

Environmental Studies (2110007)