

Dr. Rajesh C. Malan

DESIGNATION

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 Auto-correlation
Superconductivity in Metals and
Alloys
Bulk Metallic Glass (BMG)

**EXPERIENCE**

16 YEARS

CONTACT**INFORMATION**

B 202, Admin Block,
Government Engineering College,
Near Sanskar Kendra, College Road,
Valsad-396001
E mail: rcmalan@gecv.ac.in

Research Profile**Scopus :**

Author ID: 57200726711

<https://www.scopus.com/authid/detail.uri?authorId=57200726711>

Google Scholar:

<https://scholar.google.com/citations?user=s6Jjk8QAAAAJ&hl=en>

ORCID ID :

<https://orcid.org/0000-0002-6216-8007>

APPOINTMENT:

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

2011-Present

Government Polytechnic, Valsad
Adhoc lecture

2008-2011

EDUCATION :

Ph. D.
Gujarat Technological University, Ahmedabad

Feb -2021

B.Ed. : Saurashtra University, Rajkot

May-2008

M. Sc. in Physics
Saurashtra University, Rajkot

May-2007

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

May-2005

SKILLS AND KNOWLEDGE:

→ Fortran, LAMMPS, OVITO

TRAINING / WORKSHOP /CONFERENCE ATTENDED :

Conferences

1. R. C. Malan* and A. M. Vora, Structure studies of alkaline-earth metals using char d hard sphere approximation, National conference on recent trends in Science of material (NCSM-2K15), The M. S. University Baroda. 28th -30th December, 2015.
2. 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.
3. 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.
4. R. C. Malan* and A. M. Vora, *Screening Dependence Study of Electronic Structure of Liquid Alkali Metals*, Gujarat Science Congress 2017 on PDPU, Gandhinagar. 4th -5th February, 2017.
5. 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.
6. 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.
7. 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.
8. 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), Jaypee University, Noida-Delhi, 15th – 17th March, 2018.
9. 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.

10. A. M. Vora and R. C. Malan* *Vibrational Dynamics of Pd₃₉Ni₁₀Cu₃₀P₂₁Bulk Metallic Glass*, National Conference on Materials and Devices (NCMD-2018), Sharda University, Greater Noida- Delhi, 31st July-1st August, 2018.
11. 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.
12. 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.
13. R. C. Malan and A. M. Vora, *Liquid Na_{1-x}K_x Alloys: A Thermodynamical Investigation*, G. T. U. Icon -2019, International Conference, G. T. U. Ahmedabad. 16th March, 2019.
14. 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.

RESEARCH PUBLICATIONS:

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 Li_{1-x}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 Li_{1-x}Na_x alloys, J. Nano–Electronic Phys. **11** (2019) 01004. (SCOPUS Indexed Journal)
5. R. C. Malan, A. M. Vora, Thermodynamical properties of liquid K_{1-x}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 Li_{1-x}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 $\text{Pd}_{39}\text{Ni}_{10}\text{Cu}_{30}\text{P}_{21}$ 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 $\text{K}_{1-x}\text{Rb}_x$ Alloy 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 $\text{Ca}_{70}\text{Mg}_{30}$, Physica B: Phys. Condens. Matter. (SCOPUS).
 15. R. C. Malan, A. M. Vora, Study of Superconducting State Parameters of Alkali Metals, Nova Science Publishers, New York: 2023 (Book Chapter)
 16. On the study of electrical transport properties of some liquid metals by pseudopotential method, M. H. Jani, R. C. Malan and A. M. Vora, Physics and chemistry of liquids, **62** (2) 2024, 428-441. (SCI-WoS).
 17. Theoretical investigation of collective motion in some liquid metals using pseudopotential approach, M. H. Jani, R. C. Malan and A. M. Vora, **39** (9) 2024, 2550070. (SCI, Scopus).
 18. Theoretical study of pressure dependence of superconducting state parameters of alkali metals lithium and sodium using pseudopotential, Priyank Kumar, Rajesh C Malan, Kamaldeep G Bhatia, Nupur P Vora, and Basant Kumar Das, Progress in Superconductivity and Cryogenics, **26** (4), 9-13, 2024. (Scopus).
 19. Theoretical Study of Static and Dynamic Equation of State of Cerium and Ytterbium, Priyank Kumar, Rajesh C Malan, Kamaldeep G Bhatia, Nupur P Vora, and Basant Kumar Das, Journal of Condensed Matter, **03** (01), 112-115, 2025.

Training

Sr.	Programme	Duration With date	Organized by
1.	Induction Programme Phase I	2 week, 21-07-2014 to 01-08-2014	NITTTR Bhopal

2.	Induction Prograame Phase II	2 week, 07/09/2015 to 18/09/2015	NITTTR Bhopal
3.	STTP –HTMST- 2016	2 week, 14/07/2016 to 24/07/2016	SVNIT, Surat
4.	STTP on Matlab and GIS	2 Weeks, 27/04/2015 to 08/05/2015	Govt. Polytechn ic Gandhina gar
5.	STTP on Technology Enabled Learning	1 week, 27/06/2016 to 01/07/2016	NITTTR Bhopal
6.	Introduction to laser (MOOCs)	Equivalent to 2 week, 01/01/2022 to 01/04/2022	NPTEL, Swayam
7.	STTP on Thin Films and Vacuum Technology,	1 week, 09/12/2013 to 13/12/2013	SVNIT Surat
8.	Tools and Trends in Online Education System (GPP_20_1)	1 week, 15/03/2021 to 19/03/2021	Govt. Polytechnic Palanpur
9.	Development of soft skill (MOOCs)	equivalent to 1 week, 01/08/2021 to 30/10/2021	NPTEL, Swayam
10.	STTP on Intellectual Property rights and Information.	1 week, 10/03/2014 to 14/03/2014	Act. Narmada Collecge of Comp. Bharuch
11.	F D P on Physics	1 week, 01-01-2018 to 06-01-2018	KCG Ahmedabad
12.	MOOC FDP Leadership and Team Effectiveness MOOCs	Equivalent to Two weeks, JAn 2023 to April 2023	NPTEL, Swayam

INVITED LECTURES / RESOURCE PERSON/ RESEARCH PRESENTATION:

Sr. No.	Title	Name of the Event with date	Details	Organizer/ Institute	Int. Nat. /Nat./ State
1.	Structure studies of alkaline-earth metals using chard hard sphere approximation	National conference on recent trends in Science of material (NCSM-2K15), The M. S. University Baroda. 28th -30th December, 2015.	Paper Preset.	The M. S. University Baroda.	National
2.	Influence of Ultrasonic Sound on Various Biological and Chemical Activities in Different Environmental Conditions -A Review	International Conference on Recent Trends in Applied Sciences: Building the Institutional and Industrial Avenues (ICRTAS : 2015), 10th to 12th December, 2015	Paper Preset.	Charotar Education Society Anand	Internati onal
3.	Structural Study of some liquid alkali metals	XXX Gujarat science congress 2016, KSKV Kachchh Uni. Bhuj 6th – 7th February, 2016.	Paper Preset.	KSKV Kachchh Uni. Bhuj	State
4.	Structural properties of some liquid alkali metals	6th International Science Congress (ISC-2016) 8th	Paper Preset.	Hutatma Rajguru	Internati onal

	and effect of correction functions	-9th December, 2016.		Mahavidyalaya, Rajgurunagar, Pune,	
5.	Screening Dependence Study of Electronic Structure of Liquid Alkali Metals,	Screening Dependence Study of Electronic Structure of Liquid Alkali Metals 4th & 5th Feb, 2017	Paper Preset.	XXXI GSC-2017 at PDPU	State
6.	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.	Paper Preset.	Depart of Physics, Saurashtra University, Rajkot.	National
7.	Electrical Resistivity of Liquid Na-Alkali Alloy	2nd International conference on Condensed matter and Applied Physics. Government Engineering College, Bikaner, 24th – 25th November, 2017.	Paper Preset.	Government Engineering College, Bikaner	International
8.	Electrical Transport properties of Liquid Li _{1-x} Csx,	National Conference on Recent Innovations in Sciences (NCRIS- 2018), R. K. University, Rajkot, 19th –20th January, 2018.	Paper Preset.	R. K. University, Rajkot,	National
9.	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.	Paper Preset.	Jaypee University, Noida-Delhi	National
10.	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.	Paper Preset.	Sharda University, Greater Noida- Delhi	National
11.	Electrical Transport in Binary Alloy	Recent Advances in Material Science, Faculty of Science, The M. S. University of Baroda, Vadodara, 23rd –24th Nov 2018.	Paper Preset.	Faculty of Science, The M. S. University of Baroda, Vadodara	National
12.	A Variation Approach for Thermodynamical Investigation of Liquid K _{1-x} Rb _x Alloy	National Research Scholar meet on condensed Matter and Material Science	Paper Preset.	Department of Physics, Gujarat University,	National

		Department of Physics, Gujarat University, Ahmedabad, 8th December, 2018		Ahmedabad, 8th December, 2018.	
13.	Liquid Na1-XXx Alloys: A Thermodynamical Investigation	G. T. U. Icon -2019, G. T. U. Ahmedabad. 16th March, 2019.	Paper Preset.	G. T. U. Ahmedabad.	Internati onal
14.	Study of liquid K1-XRbX alloys through variational approach	International Conference on Molecular Structure & Instrumental Approaches, 26th -27th November-2020, R. K. University, Rajkot.	Paper Preset.	R. K. University, Rajkot	Internati onal
15.	Served as a Judge for the experimental Skill Level 1	Test your experimental skill Level 1, 17-02-2023	Resource person	Bombay Association for Science Education and District Science Centre Dharampur, Ministry of Culture, GoI	National
16.	Served as Mentor in New India Vibrant hackathon 2023	New India Vibrant hackathon 2023, 04-011- 2023	Resource Person	Education Department Government of Gujarat and SSIP, Gujarat SSIP	State
17.	Served as Mentor in Smart Gujarat for New India Hackathon 2019-20	Smart Gujarat for New India Hackathon 2019- 20, 24th and 25th February 2020	Resource Person	Education Department Government of Gujarat and SSIP, Gujarat SSIP	State
18.	Expert Talk for Orientation Training	Bal Vaigyanik Pradarshini Orientation training, 01-09-2023	Invited lecture/Ex pert Talk	District Institute of Education & Training Valsad	State
19.	Intellectual Property Rights and IP Management for Startup	IIC Event Workshop, 02- 05-2023	Invited lecture/Ex pert Talk	Government Polytechnic Waghai	State
20.	Served as Mentor in Azadika Amrit mahotsav Hackathon 2022, at Auro University	Azadi ka Amrut Mahotsav Hackathon 2022, 7th and 8th October 2022	Resource Person	Education Department Government of Gujarat and SSIP, Gujarat SSIP	State
21.	Innovation Creativity and	Webinar on Innovation	Invited	ITM	State

	Startup at University Campus	Creativity and Startup at University Campus 28th June 2021University	lecture/Expert Talk	Vocational University, Vadodara,	
22.	Development of Technology in India	Technology Day Celebration 11-05-2014	Invited lecture/Expert Talk	District Science Centre Dharampur, Ministry of Culture, GoI	State
23.	Gravitational Waves	National Science Day 2016, 28-02-2016	Invited lecture/Expert Talk	Education Department Government of Gujarat and SSIP, Gujarat SSIP	State
24.	Journal into Light	Celebration of World Science day and Sir C V Raman Birth Anniversary 22-11-2015	Invited lecture/Expert Talk	Education Department Government of Gujarat and SSIP, Gujarat SSIP	State
25.	Expert for Model Reformation workshop	Model reformation workshop for Science-Mathis-Environment Exhibition 2022, 25-02-2022	Invited lecture/Expert Talk	District Institute of Education & Training Valsad	State
26.	Inspire Manak Project Model reformation workshop	Inspire Manak Project Model reformation workshop, 25-08-2021	Invited lecture/Expert Talk	District Institute of Education & Training Valsad	State
27.	Inspire Award Guidance Workshop	Inspire Award Guidance Workshop 27-08-2021	Invited lecture/Expert Talk	District Institute of Education & Training Valsad	State
28.	Innovation and Opportunities for sustainable future	Innovation and Opportunities for sustainable future, 06-07-2022	Invited lecture/Expert Talk	KBS Commerce College and NATRAJ Prof. Science College Vapi	State
29.	Innovation and Opportunities for sustainable future	National Science Day 2022, 28-02-2022	Invited lecture/Expert Talk	District Science Centre Dharampur, Ministry of Culture, GoI	State
30.	Orientation Workshop for Teachers (H.S.)	SMEE-2019-20, 30-08-2019	Invited lecture/Expert Talk	District Institute of	State

			pert Talk	Education & Training Valsad	
31.	Orientation Workshop for Teachers	SMEE 2019-20, 28-08-2019	Invited lecture/Expert Talk	District Institute of Education & Training Valsad	State
32.	Orientation Workshop	SME Exhibition 2018, 10-09-2018	Invited lecture/Expert Talk	District Institute of Education & Training Valsad	State
33.	Orientation Workshop on MSE Exhibition 2017	Workshop on MSE Exhibition 2017, 26-08-2017	Invited lecture/Expert Talk	District Institute of Education & Training Valsad	State
34.	Teacher's Orientation for Science Exhibition 2014	Teacher's Orientation for Science Exhibition 2014, 25-08-2014	Invited lecture/Expert Talk	District Institute of Education & Training Valsad	State
35.	Life and Work of Sir C V Raman	National Science Day celebration 2021	Invited lecture/Expert Talk	District Science Centre Dharampur, Ministry of Culture, GoI	State
36.	Innovation and Startup Ecosystem Enablers	Innovation and Startup Ecosystem Enablers, 23rd August, 2022	Invited lecture/Expert Talk	BBDITM, Lucknow, Uttar Pradesh	State
37.	ISRO Mars Mission 2014	Mars Mission 2014, 28-09-2014	Invited lecture/Expert Talk	District Science Centre Dharampur, Ministry of Culture, GoI	State
38.	Life and Work of Dr. Vikram Sarabhai	Celebration of 101st Anniversary of Dr. Vikram Sarabhai, 14-08-2020	Invited lecture/Expert Talk	District Science Centre Dharampur, Ministry of Culture, GoI	State
39.	SCF Science Paper Position workshop for designing National Curriculum for Science for Schools under NEP	Science Paper Position workshop for designing National Curriculum for Science for Schools under NEP, 06-04-2022	Resource Person	District Institute of Education & Training Valsad	National
40.	Gujarat State science	Gujarat State science	Resource	District	State

	position paper workshop	position paper workshop, 05-02-2022	Person	Institute of Education & Training Valsad	
41.	Life and work of Sir C V Raman	Celebration of National Science Day 2018, 28-02- 2018	Invited lecture/Ex pert Talk	District Science Centre Dharampur, Ministry of Culture, GoI	State
42.	Webinar on Physics of Advanced Engineering Materials	Physics of Advanced Engineering Materials, 30-12-2022	Invited lecture/Ex pert Talk	Dr. S. & S. S. Gandhi Government Engineering College Surat	State
43.	Served as a Judge for Science, Mathematics and Environment Exhibition 2022-23	Science, Mathematics and Environment Exhibition 2022-23, 3 to 5 January, 2023	Resource Person	GCERT Gadhinagar Sponsored DEO, Valsad, DIET Valsad at IP Oza High school Palikarmbeli,	State
44.	Served as Judge in Inspire -Manak Science Exhibition 2019	Inspire -Manak Science Exhibition 2019, 08-01- 2019	Resource Person	GCERT, Gandhinagar, Inspired, DIET, Valsad and Waghai, DSC Dharampur	State
45.	Served as Judge in Inspire Award Science Exhibition and competition 2019-20	Inspire Award Science Exhibition and Competition 2019-20, 27- 12-2019	Resource Person	DIET Valsad	State
46.	Served as Judge for Science Maths and Environment Exhibition 2019	Science Maths and Environment Exhibition 2019, 26-09-2019	Resource Person	GCERT, Gandhinagar, NIF, Gandhinagar, Inspired, DIET, Valsad Jalaram New High School Nargol,	State
47.	Served as a Judge for Science, Maths and Environment Exhibition 2015	Science, Maths and Environment Exhibition 2015, 26-10-2015	Resource Person	GCERT, Gandhinagar, Inspired, DIET, Valsad and	State

				SMSM High School Dharampur	
48	Expert Talk on SSIP Sensitization Programme	SSIP Sensitization Programme, 18th April 2024	Invited lecture/Expert Talk	Government Polytechnic Valsad	State
49	Expert Talk on “Quantum Physics a Revolution”	National Level Tech Fest and Innovation Festival, Organised by DAIT Valsad and DSC Dharampur , 28-02-2025	Invited lecture/Expert Talk	D. S. C. Dharampur	National
50	Expert Talk on “Quantum Physics : A Revolution”	Dr. S. & S. S. Gandhi Government Engineering College Surat	Invited Lecture/Expert Talk	Dr. S. & S. S. Gandhi Government Engineering College Surat	Institute

PROFESSIONAL MEMBERSHIPS:

Life Member, Indian Society for a Technical Education

DUTIES & PORTFOLIOS:

Head of Applied Science and Hum. Dept.	2012-2025
Mentor Mentee Scheme Coordinator	2023-24
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
Nodal officer of Various ACPC help centre	2013- 2022

SUBJECTS @ U. G. LEVEL:

Physics (BE01000021) (Civil, Electrical and Mechanical Engineering)
 Physics (3110018) (Electrical Engineering)
 Physics (3110011) (Civil and Mechanical Engineering)
 Basics of Remote Sensing and GIS (3151308) (Environmental Engineering)
 Environmental Studies (2110007) (Chemical , Civil, Electrical and Mechanical