

VNR VIGNANA JYOTHI INSTITUTE OF ENGINEERING & TECHNOLOGY

KNOWLEDGE ASSET 2022-23

Name: **Dr M Ramesh**

Designation: Asst. Prof.

Department: (H&S) Physics

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Experience (in years): Teaching: 3 Research: 4 Others (if any, specify): Nill

1. Educational / Technical qualifications:

S.No	Level (UG / PG / Ph.D)	Year of passing	Specialization
	Bsc	2006	Maths, Physics, Electronics
	PG	2010	Solid State Physics
	MTech	2014	Computational Technics
	PhD	2020	Computational condensed matter physics
	Research Associative	2022	Solar cell device

2. Teaching and Learning:

2.1. Teaching Interests:

Solid state physics, Basic physics, Modern Physics, Solar cell devices.

2.2. Novel Teaching & Learning Techniques adopted: VIT VIL, learning by doing.

2.3. Involvement in curriculum updating / Design: Yes

3. Co-curricular and Extra-Curricular Activities

3.1. Interests and Hobbies: Reading and Games

3.2. CCA/ECA Organized: Nill

3.3. CCA/ECA participated: Nill

3.4. Counseling and Mentoring Activity: Nill

3.5. Committees involved in: Nill

Department level: Nill

Institute Level: Nill

4. Conference / Workshop / Seminar / Guest Lectures :

4.1 Conducted: Nill

4.2 Attended:

5. **Mamindla Ramesh** and Manish K. Niranjana, "First principle study in MgO surface properties and Pt/MgO/GaAs (110) heterojunctions to estimate Schottky barrier height, band offset and current-voltage characteristics", (**Poster**) at International Conference on Advanced Materials Modelling (ICAMM-2019) at University de Rennes 1, Rennes, France.

6. **Mamindla Ramesh** and Manish K. Niranjana, “Electronic properties of the Mg₂Si (100) surfaces”, **(Oral)** at USPEX-2019 at University de Rennes 1, Rennes, France.
7. **Mamindla Ramesh** and Manish K. Niranjana, “First principle study in MgO surface properties and Pt/MgO/GaAs (110) heterojunctions to estimate Schottky barrier height, band offset and current-voltage characteristics”, **(Poster and Oral)**, Research day-2019 at CBIT, Hyderabad, India.
8. **Mamindla Ramesh** and Manish K. Niranjana, “First principle study of bias voltage dependent Schottky barrier height of Pt/MgO interface,” **(Poster)**, 3rd International Conference on Condensed Matter & Applied Physics 2019, Bikaner, Rajasthan, India.

9. Academic Contribution and Research & Consultancy:

5.1. Invited Lectures: Nill

5.2. Articles: 9

5.3. Books published as single author or as editor: Nill

5.4. Projects Guided : Nill

a) UG : b) PG :

5.5. Research Interests : Theoretical Solid State Physics, *ab-initio* Computational condensed matter Physics, Solar cell devices, Quantum transport theory, DFT +NEGF, Physics of surfaces and interfaces at atomic scale; Quantum transport in nanoscale devices. Multi-junction solar cells devices

5.6. Ph.D students : Nill

a) Enrolled :

b) Submitted :

c) Awarded :

5.7. Papers published in reviewed journals :

S.No	Title of the Paper	Journal Name Vol.No. PP	ISBN/ISSN No.	Impact Factor/ Citation Index	National/ International
1	Phonon modes, dielectric properties, infrared reflectivity, Raman intensity spectra of semiconducting silicide Ba ₂ Si: First principle study	Journal of physics and chemistry of solids, 121 219-227	0022-3697	4.38	International
2	Theoretical investigation of lattice dynamics, dielectric properties, infrared reflectivity and Raman intensity spectra of Nowotny chimney-ladder semiconducting silicide Ru ₂ Si ₃	Materials chemistry and physics, 222 165-172	0254-0584	4.77	International
3	Surface electronic structure, relaxations and thermodynamic energies of (100), (110) and (111) surfaces of Mg ₂ Si: A first-principles theoretical study	Surface Science, 98 106030	1348-0391	2.07	International
4	Asymmetric-dimer	Solid state			

	reconstruction and semiconducting properties of Mg ₂ Si (100) surface: Prediction from meta-GGA and hybrid functional study	Sciences, 98 106030	1293-2558	3.75	International
5	Schottky barrier height and modulation due to interface structure and defects in Pt MgO Pt heterojunctions with implications for resistive switching.	Journal of Applied Physics, 127 205306	0021-8979	2.87	International
6	Syntheses of five new layered quaternary chalcogenides SrScCuSe ₃ , SrScCuTe ₃ , BaScCuSe ₃ , BaScCuTe ₃ and SrScCuTe ₃ : crystal structures, thermoelectric properties and electronic structures.	Inorganic Chemistry Frontiers, 17 4086-4101	2052-1553	7.77	International
7	Influence of phonon assisted tunnelling on photovoltaic properties of BaSi ₂ and BaGe ₂ <i>p-n</i> homojunction solar cell devices.	Journal of Applied Physics, 131 185001	0021-8979	2.87	International
8	"Electron-Phonon interaction effect in the photovoltaic parameters of indirect (direct) bandgap AlSb (GaSb) <i>p-n</i> junction solar cell devices: A density functional theoretical study.	Physical Chemistry Chemical Physics, 24	24181-24191	3.94	International

5.8. Papers presented at National / International Journals :

S.No	Title of the Paper	Names of the Conference/ Seminars	National/ International	Period
1	First principle study of bias voltage dependent Schottky barrier height of Pt/MgO interface	3 rd International Conference on Condensed Matter & Applied Physics 2019	International	2019
2				

5.9. Sponsored research Projects: Nill

S.No	Title	Agency	Period	Grant amount	Ongoing / Completed

5.10 Consultancy Projects: Nill

S.No	Title	Agency	Period	Sanctioned Amount	Ongoing / Completed

10. Awards / Honors received:

Qualified Graduate Aptitude Test in Engineering (GATE) in 2010.

Selected to international conference with fellowship ICMM-2019 (attended in France)

Research appreciation certificate from IIT Hyderabad in 2019.

Best Poster Award on Research Day at CBIT, Hyderabad, 2019.

11. Motto:

A lot of hard work is hidden behind nice things