



**Name : Dr.T.Rajani**

**Designation:** Assistant Professor

**Department:** Humanities & Sciences

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**Experience (in years): Teaching: 18 Y 3 M ,Research: 9 Y Others: NIL**

### 1. Educational / Technical qualifications:

S.No	Level (UG / PG / Ph.D)	Year of passing	Specialization
1.	Ph. D (JNTU,Hyderabad)	2017	Nanoscience and Technology
2.	M.Sc.(Andhra University)	2000	Electronics
3.	B.Sc.(Andhra University)	1998	Maths, Physics & Statistics
4.	Intermediate	1995	Maths, Physics,Chemistry.
5.	High School Education	1993	
6.	PGDCS (UOH)	2003	Part-time course
7.	Pedagogy for online and Blended teaching learning process(IIT,Bombay)	2017	On-line course

### 2. Teaching and Learning:

#### 2.1 Teaching Interests:

- ✓ Engineering Physics
- ✓ Quantum Mechanics
- ✓ Magnetic materials
- ✓ **Nanomaterials:** Nanoferrites, Nanocomposites,Hybrid Nanocomposites.

#### 2.2 Novel Teaching & Learning Techniques adopted:

WIT AND WIL, Learning by doing, Lecture method, Discussion Method, Flipped classroom, Lab Protocol, Demonstration method at Class (for few concepts) and at Physics lab.

#### 2.3 Involvement in curriculum updating / Design: Involved in the syllabus design for I .B.tech

Physics for the year academic 2018-19

### 3. Co-curricular and Extra-Curricular Activities

#### 3.1. Interests and Hobbies:

- Reading Books.

3.2. CCA/ECA Organized: Nil

3.3. CCA/ECA participated: Nil

3.4. Counseling and Mentoring Activity: Nil

3.5. Committees involved in: Nil

3.6 Department level:

- BOS-Member(Physics)
- Incharge of Engineering Physics Lab-2(2017 to till date)
- First year Time-Table co-ordinator (2014-2016).
- Department Library In-charge(2013-2014)
- Listing out Faculty Achievements at department level

Institute Level:

- Involved in NAAC work from Physics Stream.

#### **4. Conference / Workshop / Seminar / Guest Lectures:**

##### **Conducted:**

- ✓ Organised a seminar talk on “A birds view of Nanoscience and Technology in Indian Research” at VNRVJIET for all faculty on 25/07/2013.
- ✓ Co-ordinator for two day Workshop on “Advanced Materials and their applications” at VNRVJIET on 2/9/2013 and 3/9/2013 at VNRVJIET for all faculty and students.
- ✓ Organised Academic Guest Lecture on “Applications of Physics in Instrumentation Engineering” on 26/10/ 2017 for the First B.Tech Electronics and Instrumentation Engineering students of VNRVJIET.

##### **Attended:**

- 1) Refresher course on Nanoscience and Technology and their applications at JNTU, Hyderabad, 2010.
- 2) Attended Workshop on Introduction to Nanoscience and Technology and their applications conducted by CNST, JNTU-H in 2010.
- 3) Attended Two Day workshop on Creativity of teaching, VNRVJIET in 2013.
- 4) Attended a guest lecture on Nanoscience and Technology for Sustainable infrastructure, CNST, VNRVJIET, 2016.
- 5) Attended a guest lecture on 1) Paper based lithium ion batteries for flexible hybrid electronics Analytical analysis of human breath for identifying significant changes in composition induced from hypoglycemia, CNST, VNRVJIET, 2016.
- 6) Attended a guest lecture on Nuclear Magnetic Resonance spectroscopy from Molecule to Human, CNST, VNRVJIET, 2017.
- 7) Attended Two Day workshop on “Laser technology in Engineering Applications ” conducted by EIE department, VNRVJIET , 2017.

- 8) Successfully completed Workshop on 'Effective and Efficient Online Teaching in the Age of Corona, A Hands On Workshop' on 23 May 2020 by IIT Bombay.
- 9) NPTEL course completed on “Properties of Materials” conducted for 8 weeks.
- 10) Attended E-International Symposium on Synthesis and Characterization of Smart Materials and Their Potential Applications, during 14th-17th June 2020 using CISCO Webex platform.
- 11) Attended FDP on Materials:Recent trends and Applications 02-07 June organized by GRIET,June 2020
- 12) Attended FDP on Virtual labs-Creating Next generation Teachers conducted by Geethanjali college of engineering and Technology,June 2020
- 13) Attended National Level FDP program on Multidisciplinary approach towards emerging trends in science and Humanities organised by Ramachandra college of engineering ,June 2020.
- 14) Attended International Webinar on “Flexible Energy Storage Devices” Jointly organized by Centre for Nano Science and Technology, IST, JNTU Hyderabad and Dayalbagh Educational Institute, Agra on 20th June 2020 under DST SERB and TEQIP III: Mentoring/Twinning system.
- 15) Two day’s Faculty Development Program (FDP) on “ **Advances in Photonics**”organized by Department of Physics, RGM CET (Autonomous), during 06-07 July 2020.TILQDO-CE000076.
- 16) Attended FDP on “Engineering Physics and Material Science” organised by CBIT during 03-07 August 2020.
- 17) Attended FDP on “Role of Material Science in Engineering applications perspective” organised by MGIT during 03-07 August 2020.
- 18) Successfully completed “ Nanotechnology and Nanosensors -Part 1” on COURSEERA Platform.

## **5. Academic Contribution and Research & Consultancy:**

5.1. Invited Lectures:

5.2. **Articles/Chapters published in Books:**

1) One Book chapter published as a first author.

**Title of Book:** Recent developments in Computing, Electronics and Mechanical Sciences.

**Title of Chapter:** Synthesis of Nano materials by Chemical Methods ;ISBN:978-81-941281-9-9,ANVI PUBLISHERS, New Delhi.

2) **Dr.T.Rajani**, Assistant Professor (Physics), First author.Title of Chapter:**Theory of luminescence and materials,De-Gruyter publication house(Under Publication).**

3)**Dr.T.Rajani**, Assistant Professor (Physics),First author,**Title of Chapter: Meso,Micro,Nano Particulates filled Shape memory polymers, Springer Publication (Under Publication).**

4)**Dr.T.Rajani**, Assistant Professor (Physics),Second Author, Title of Chapter:**Wet Synthesis methods of Shape memory polymer composites ,Springer Publication (Under Publication).**

5.3.Reviewer/Editorial member of Journals:

- ✓ Acting as Reviewer for **Journal of Alloys and Compounds(Elseiver publications)**
- ✓ Editorial Member in **Journal of Materials(SCIREA)**
- ✓ Reviewer for International conference on Multi functional Materials organized by Geethanjali College of Engineering and Technology on 19-21 December 2019.
- ✓ Editorial board member in International journal of materials science and Applications(IJMSA).
- ✓ Acting as Reviewer for **Journal of Emergent Materials (Springer publications).**

**5.4. Projects Guided:** a) UG: One student enrolled under Internship Program-2020 (B.Tech)

Threes students enrolled under Internship Program-2021 (B.Tech)

b) PG: One M.Tech student guided -2019

**5.5.Research Interests:**

1. **Nanoparticles Synthesis and Characterization.**
2. **Magnetic Nanocomposites Synthesis and Characterization.**
3. **Nano Ferrites**
- 4.**Functional Nanomaterials of 1Dimension,2Dimension.**
- 5.**Study of Structural, Magnetic, Optical, Electrical,Thermal properties of Nanoparticles**

5.6. Ph.D students: **Nil**

- 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.	Review on Recent trends in the usage of Nanomaterials in Nanocomposites and their applications”,	<i>International Journal of Advanced Materials manufacturing and Characterization (IJAMMC),</i>	Vol-1,Issue-1, March-2012, ISSN 2277-3886.		International
2	Usage of SWCNT/MWCNT doped with Nano ferrites in Nanocomposites and their applications”	<i>International Journal of Advanced Materials manufacturing and Characterization (IJAMMC),</i>	Vol-2, Issue-2, October-2012, ISSN 2277-3886.		International
3	Review On VHTM Studies In Ferrite Materials	Journal Of Science And Information	2229-5836	0.7	National
4	Structure, Morphology & Infrared Spectroscopic Characterization Of $Ga_{(2x+2)}N_{(49-x)}O_3$ Ferrite Synthesized Using Sol Gel Technique”	IOSR-Journal Of Applied Physics, Vol-7	2278-4861	1.2	International
5	Studies on conducting nanocomposite with gallium nitride-doped ferrite, part – I	Journal of Nanosystems and Nanoengineering <a href="#">Proceedings of the Institution of Mechanical Engineers Part N and Nanosystems</a>	ISSN: 2397-7914 Online ISSN: 2397-7922 2015	Thomson Reuters @0.35	International
6	Studies on conducting nanocomposite with gallium nitride-doped ferrite, part-II	Journal of Nanosystems and Nanoengineering <a href="#">Proceedings of the Institution of Mechanical Engineers</a>	ISSN: 2397-7914 Online ISSN: 2397-7922 2017	Thomson Reuters @0.35	International

		<a href="#">Engineers Part N and Nanosystems</a>			
7	Studies on intrinsic conducting polymer nanocomposite with gallium nitride-doped ferrite, part – IV	Mater. Res. Express 5 (2018) 065017.	June 2018		International
8	Optical parameters of Gallium Nitride doped ferrite-polypyrrole nanocomposites	Journal of material science:Materials in Electronics (2020) 31:3238–3244 Springer	Jan 2020	2.195	International
9	<b>Influence of silica in performances characteristics of Asphalt mixes</b>	GLOBAL JOURNAL OF ENGINEERING SCIENCE AND RESEARCHES ISSN :2348 – 8034	Feb 2020	5.070	International
10	<b>Two dimensional transition metal dichalcogenides nanomaterials and their applications</b>	Engineering andTechnology Journal for Research and Innovation (ETJRI) (ISSN 2581-8678	JULY 2021	3.42	
11	<b>Review on conducting Nanocomposites and their applications</b>	Engineering andTechnology Journal for Research and Innovation (ETJRI) (ISSN 2581-8678	JULY 2021	3.42	

### 5.8. Papers presented at National / International Journals:

S.No	Title of the Paper	Names of the Conference/ Seminars	National/ International	Period
1	Introduction, Synthesis, Properties and applications of carbon nano tubes	National Conference	National Conference	Feb,2011

2.	Review on Nano composite Materials and their application in Nano Air Vehicles	International conference on Recent advances in Design,Development and Operation of Micro Air vehicles ISBN 978-81-7800-281-1	International Conference	ICRAMAV 10-12 December 2012
3	Review on usage of III-V semi-conducting materials in Nano composites	International Conference on Smart Syatems ISBN-978-93-82163-88-6	International Conference	ICSS- 7&8 October 2013.
4	Review on Usage of II-VI Semi-Conducting Nanomaterials	National Conference on Nanotechnology's Invisible threat:Small science,Big Consequences	National Conference	26-27 September-2013
5.	Studies on conducting PPY-Gallium nitride doped Ferrite Nanocomposite	International conference on Nanomaterials and Nanotechnology ISBN 978-93-85436-76-5	International Conference	7-10 Dec.2015, K.S.Rangasamy college of Technology,Tiruchengode,In ,
6	Morphological, structural and thermal studies of gallium nitride ferrite	International conference on Condensed matter and Applied Physics AIP Conf. Proc. 1728, 020342 (2016	International Conference	NOV,2016
7	Studies on conducting nanocomposite with gallium nitride-doped ferrite, part – III Wasp-waist formation.	International conference on Condensed matter and Applied Physics AIP Conference Proceedings 1953, 030199 (2018); doi: 10.1063/1.5032534	International Conference	Nov,2017
8	Studies on Hysteresis Parameters of gallium nitride doped ferrite/Polypole nanocomposites	International conference on Materials Processing and characterization	International Conference	April 2018

9	Thermal Properties of Gallium Nitride/Ferrite/Polypyrrole Nanocomposites	International conference on Condensed matter and Applied Physics AIP Conference Proceedings 2220, 020153 (2020); <a href="https://doi.org/10.1063/5.0001152">https://doi.org/10.1063/5.0001152</a>	International Conference	May 2020
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#### 5.9. Sponsored research Projects: 01

S.No	Title	Agency	Period	Grant amount	Ongoing / Completed
1	Sophisticated flexible super capacitors for high energy storage applications based on nano materials	DST(SEED) Young Scientists and Technologists	3 Years		One of CO-PI <b>Ongoing</b>

#### 5.10 Consultancy Projects: Nil

S.No	Title	Agency	Period	Sanctioned Amount	Ongoing / Completed

#### 6. Awards / Honors Received :

- Qualified **FET** (Faculty Eligibility Test) conducted by JNTUH in 2010.
- Life member of Indian society for technical education(ISTE)
- Associate member of IETE (institute of electronics and telecommunication engineering).
- Life member of Material Research society of India MRSI (LMB3020)
- Life Member of Indian Association of Nanoscience and Technology(LT1157)
- Received Award from VIWA-2018 - Outstanding Women in Science for the contribution in the area of Nanoscience and Technology.
- Life member of Nano Molecular society of India.

#### 7. Motto: Build a Positive attitude towards Work and Life