

**Name:** Dr. Thirmal Chinthakuntla

**Designation:** Assistant Professor

**Department:** H&S (Physics)

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**Experience (in years):** 11 years 6 months    **Teaching:** 5 year 6 months    **Research:** 6 (1 year postdoctoral fellow and 5 years full time research scholar). Others (if any, specify):

**1. Educational / Technical qualifications:**

S.No	Level (UG / PG / Ph.D)	Year of passing	Specialization
1	UG (KU)	2008	MPC
2	PG (OU)	2010	Physics (E&I)
3	PhD (IIT Madras)	2016	Physics (Ferroelectrics)
4	Post Doctorate (IIT Delhi)	2017	Physics (Multiferroics)
5	National Exam GATE-Physics	2011	All India Rank -201

**2. Teaching and Learning:**

- 2.1. **Teaching Interests:** Engineering Physics, Applied Physics, Physics of materials, Electromagnetic Theory, Classical Mechanics, Quantum Mechanics, Statistical Mechanics, Basic Electronics, Digital electronics, Semiconductor Physics, Nanoscience and Technology
- 2.2. Novel Teaching & Learning Techniques adopted: WIT &WIL, Chalk-Talk, PPT, LBD, Think Pair Share
- 2.3. Involvement in curriculum updating / Design: Member, Board of Studies, Physics

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

3.1. Interests and Hobbies: Research and Teaching

3.2. CCA/ECA Organized: -----

Organised Mono act, Open mic and Dialogue war, stage play, street play etc under Drama club of VNRVJIET (DRAMATRIX).

3.3. CCA/ECA participated:

Faculty Coordinator for Dramatrix club, VNRVJIET.

Faculty Coordinating Committee member, Sintillashunz-2020

Faculty coordinator Sintillashunz-2023 .

3.4. Counseling and Mentoring Activity: -----

### 3.5. Committees involved in:

**Department level:** Department RCC coordinator, Department Coordinator for Virtual labs, BOS committee member for Physics discipline.

**Institute Level:** Institute R&D member, Member OTLE, Member student Progression, R&D Member at CNST, faculty coordinator for Dramatrix club, Faculty advisor and coordinator for IEEE-Nanotechnology council.

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

### 4.1 Organized:

1. A Guest lecture on “Nanomaterials for energy harvesting applications” for I BTech EIE and EEE students on 15<sup>th</sup> March 2019, Resource Person: Dr. R. Rakesh kumar (Asst. Prof, NITW)
2. Organized a two day webinar “Multifunctional Materials” during 15<sup>th</sup>-16<sup>th</sup> July, 2020 at VNRVJIET.
3. Organized an R&D Interactive session for faculty and scholars by Prof. Ch. Subrahmanyam, Department of Chemistry, Indian Institute of Technology Hyderabad on 27-04-2022.
4. Conducted and chaired IEEE Sponsored Summer school on Nanotechnology-during 16-19-Nov-2022.
5. Organized R&D webinar series during July-2021 to June-2022.

### 4.2 Attended:

#### *a) Oral presentation*

- i. **C. Thirimal**, and P. Murugavel, Investigation of magnetoelectric effect in polyvinylidene fluoride- $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$  nanocomposite films, The 2<sup>nd</sup> international conference on Polymer Materials Science held at Bangkok, Thailand, January 14-16, 2016.
- ii. **C. Thirimal**, and P. Murugavel, A new organic ferroelectric Diisopropylammonium Bromide – an alternative to oxides? , 19<sup>th</sup> National Seminar on Ferroelectrics and Dielectrics, held at MANIT-Bhopal, December 19-21, 2016

#### *b) Poster presentation*

- i. **C. Thirimal**, C. Nayek, V. Subramanian and P. Murugavel, Investigation of magnetoelectric effect in PVDF- $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$  nanocomposite films, IUMRS-International Conference in Asia-2013, IISc, Bangalore, India, December 16-20, 2013.
- ii. **C. Thirimal**, V. Subramanian and P. Murugavel, Impedance spectroscopic analysis of diisopropylammonium bromide, In-house symposium-2014, department of Physics, IITM, Chennai, Tamil Nadu, India, 2014.
- iii. **C. Thirimal**, P. Murugavel and V. Subramanian, Synthesis and characterization of PVDF- $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$  nanocomposite films, 59<sup>th</sup> DAE solid state physics symposium, VIT University, Vellore, Tamil Nadu, India, December 16-20, 2014.

- iv. **C. Thirmal** and P. Murugavel, Investigation of ferroelectric switching characteristics of diisopropylammonium bromide films, In-house symposium-2015, department of Physics, IITM, Chennai, Tamil Nadu, India, 2015.
- v. C. Thirmal has presented a paper at ICMM-2022 at Gitanjali Engineering college, Hyderabad.

#### **4.3 FDPs: After Joining at VNRVJIET:**

1. Successfully participated “Recent trends in laser technology & its applications”, on 29-30 Nov, 2017 at VNRVJIET,
2. Successfully completed one week FDP on ‘Instructional design and delivery system” on 11-16 Dec 2017 by NITTTR at VNRVJIET.
3. Attended the workshop “To train the trainers for implementation of Induction program” on 17-19 May 2018 at JNTUH.
4. Successfully completed AICTE approved FDP “Foundation program in ICT for Education ” on 13<sup>th</sup> Sept to 18<sup>th</sup> Oct, 2018 by IITB.
5. Successfully completed AICTE approved FDP “Pedagogy for online and Blender Teaching-Learning Process” on 30<sup>th</sup> Oct to 13<sup>th</sup> Dec, 2018 by IITB.
6. Attended a two day workshop on “Technical Writing” on 28<sup>th</sup> -29<sup>th</sup> June, 2019 at VNRVJIET
7. Attended the workshop “To train the trainers on Induction program” on 5<sup>th</sup> -7<sup>th</sup> Aug 2019 at JNTUH.
8. Participated in “Advances in chemical engineering and science-2020” held at IISER, Bhopal, during 28<sup>th</sup> -29<sup>th</sup> Feb 2020.
9. Attended “a three day workshop on train the trainers on induction program” during 5-7, Aug-2019 by JNTUH under Teqip-III.
10. Completed a national level quiz on NBA, conducted by BVCE, Mumbai on 13<sup>th</sup> May 2020.
11. Successfully completed a course on “Focus on Peer Review” by A Nature Master classes online course on 25<sup>th</sup> May 2020.
12. Completed a national level quiz on NAAC, conducted by PVPCE, Mumbai on 6<sup>th</sup> June 2020.
13. Successfully completed a FDP on “The BodhiTree and SAFE Tools for Effective Online Teaching” on 20<sup>th</sup> -21<sup>st</sup> June 2020 by IITB.

14. Successfully completed online faculty development program on “Quantum computing” during 24-29 August 2020, conducted by MNIT-Jaipur, NIT-Patna and Ministry of Electronics and IT, GoI.

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

### **5.1. Invited Lectures:** Dr. C. Thirmal as Resource Person,

1. Dr. C. Thirmal, has given an invited talk at “one week FDP of development, characterization and analysis of composites” during 19<sup>th</sup> -23<sup>rd</sup> Nov-2019 at Mechanical dept, VNRVJIET.
2. Dr. C. Thirmal, is one of the resource persons at “Three Days Hands on Workshop on Effective Utilization of Digital Platforms for Teaching and Learning Process” during 1<sup>st</sup> -3<sup>rd</sup> May 2020. (As a part of restart training work)
3. Dr. C. Thirmal, is one of the resource persons at “Three Days Hands on Workshop on Effective Utilization of Digital Platforms for Teaching and Learning Process” during 15<sup>th</sup> – 17<sup>th</sup> May 2020. (As a part of restart training work)
4. Dr. C. Thirmal acted as resource person cum coordinator at a webinar “Multifunctional Materials” during 15<sup>th</sup>-16<sup>th</sup> July, 2020 at VNRVJIET.
5. Dr. C. Thirmal, has given an invited talk at “AICTE-sponsored, 2-week Online Short-Term Training Programme on “Design and Structural Evolution of Advanced Functional Materials Suitable for Engineering Applications” during February 15<sup>th</sup> –20<sup>th</sup>, 2021 organized by EIE and H&S dept, VNRVJIET on “Piezo-electrics: Fabrication & Applications”

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

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

### **5.4. Projects Guided:**

- a) UG : Guided – 2 B.Tech Major project  
1 B.Tech Minor project
- b) PG : Guided 1-M. Tech. Minor project

5.5. **Research Interests:** Ferroelectric and dielectrics for sensors, actuators and energy storage applications

5.6. Ph.D students :

- a) Enrolled : -----
- b) Submitted : -----

c) Awarded : -----

5.7. Papers published in reviewed journals : 18

S.No	Title of the Paper	Journal Name Vol.No. PP	ISBN/ISSN No.	Impact Factor/Citation Index	National/International
1	Study of ferroelectric characteristics of diisopropylammonium bromide films	<i>J. Appl. Phys</i> , 120, 124107 (2016).	ISSN-0021-8979	2.1	International
2	Non-isothermal crystallization kinetics and nanomechanical properties of polyvinylidene fluoride - $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ nanocomposite films.	<i>Adv. Sci. Eng. Med.</i> 8, 483-489 (2016).	ISSN: 2164-6627		International
3	Magnetic, dielectric and magnetodielectric properties of PVDF- $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ polymer nanocomposite film.	<i>AIP Adv.</i> , <b>3</b> , 112109 (2013)	ISSN 2158-3226	1.6	International
4	Impedance spectroscopic analysis of the organic ferroelectric diisopropylammonium bromide (DIPAB).	<i>Curr. Appl. Phys.</i> , <b>14</b> , 688 (2014).	ISSN 1567-1739	2	International
5	Enhanced magnetic properties in low doped $\text{La}_{1-x}\text{Ba}_x\text{MnO}_3$ ( $x = 0, 0.1$ and $0.2$ ) nanoparticles,	<i>J. Magn. Magn. Mater</i> , <b>364</b> , 125-128 (2014)	ISSN: 0304-8853	2.6	International
6	Study of enhanced	<i>Mater. Sci. Eng. B.</i> , <b>199</b> 121-124	ISSN:	2.6	International

	magnetism in Lu doped multiferroic bismuth ferrite,	(2015)	0921-5107		al
7	Origin of enhanced magnetization in rare earth doped multiferroic bismuth ferrite,	<i>J. Appl. Phys.</i> , <b>115</b> , 073902 (2014).	ISSN-0021-8979	2.1	International
8	Photovoltaic and photo-capacitance effects in ferroelectric BiFeO <sub>3</sub> thin film	<i>Appl. Phys. Lett.</i> , <b>110</b> , 192906 (2017).	ISSN-0003-6951	3.4	International
9	Vibrational spectroscopic and computational studies on diisopropylammonium bromide,	<i>Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy</i> , <b>184</b> , 211-219 (2017).	ISSN: 1386-1425	2.1	International
10	Evolution of Morphology, Ferroelectric and Mechanical Properties in Poly(vinylidene fluoride) - Poly(vinylidene fluoride-trifluoroethylene) Blends	<i>J. Appl. Polym. Sci.</i> <b>45955</b> , 1-13 (2017).	ISSN: 1097-4628	1.9	International
11	Synthesis and characterization of PVDF-La <sub>0.7</sub> Sr <sub>0.3</sub> MnO <sub>3</sub> nanocomposite films.	<i>AIP conf. proc.</i> , <b>1655</b> , 050011 (2015)	ISSN: 0094-243X		International
12	Dipole pinning effect on photovoltaic characteristics of ferroelectric BiFeO <sub>3</sub> films	<i>Journal of Applied Physics</i> <b>123</b> (2), 024101(2018)	ISSN-0021-8979	2.1	International
13	Pressure induced phase transformations in diisopropylammonium	<i>Journal of Solid State Chemistry</i>  <i>Volume 274, June 2019, Pages 182-187</i>	ISSN: <b>0022-4596</b>	2.2	International

	um bromide				
14.	The composition and poling-dependent photovoltaic studies in ferroelectric (Bi <sub>1-x</sub> Sr <sub>x</sub> )(Fe <sub>1-x</sub> Ti <sub>x</sub> )O <sub>3</sub> thin films	<i>Journal of Materials Science: Materials in Electronics</i> ,  <i>Volume: 31</i> , 1515-1523 (2020)	<b>ISSN-09574522</b>	2.195	International
15.	“Dielectric dispersion, linear and nonlinear optical properties of Li <sub>2</sub> O–WO <sub>3</sub> –B <sub>2</sub> O <sub>3</sub> : V <sub>2</sub> O <sub>5</sub> glasses”,	<i>Journal of Advanced Dielectrics</i> , <i>Volume 787</i> , 1280-1289 (2020).	<b>ISSN: 20101368</b>	0.351	International
16	The Effect of Fluorine Doping on Structural and Dielectric Properties of Molecular Ferroelectric Diisopropylammonium Bromide	<i>Journal of The Institution of Engineers (India): Series E</i> , 1-5,2021	<b>Electronic ISSN</b>  225 0- 249 1	0.9	International
17	Study of Structural, Dielectric and AC conductivity properties of SrMoO <sub>4</sub>	Materials Research Bulletin, 111618, 2021.	ISSN 0025-5408	4.64	International
18	Isostructural phase transition (IPT) in CaMoO <sub>4</sub> with Scheelite structure	Ceramics International, 48, 11,14987-14992 (2022).	ISSN: 0272-8842	4.53	International
19	Study of structural, dielectric and AC conductivity properties of SrMoO <sub>4</sub>	Materials Research Bulletin 146, 111618 (2022)	ISSN: 1873-4227	5.6	International
20	ZIF-67-Metal–Organic-Framework-Based Triboelectric	Nanoenergy Advances 2 (4), 291-302 (2022)	ISSN: 2673-706X		International

	Nanogenerator for Self-Powered Devices				
21	Energy harvesting properties of the Nafion thin films	Engineering Research Express 4 (4), 045015 (2022)	ISSN: 2631-8695	1.47	International
22	Improved dielectric and AC conductivity properties of P (VDF-TrFE)-Nafion blends for high-temperature flexible capacitor applications	Current Applied Physics 44, 63-70 (2022)	ISSN: 1567-1739	2.86	International
23	A folded $\pi$ -system with supramolecularly oriented dipoles: single-component piezoelectric relaxor with NLO activity	Chemical Science 14 (10), 2547-2552, (2023)	ISSN 2041-6539	9.96	International
24	Dielectric characterization studies of hydrogen-bonded polar liquids in nonpolar medium using cavity perturbation technique	Materials Today: Proceedings, <a href="https://doi.org/10.1016/j.matpr.2023.03.697">https://doi.org/10.1016/j.matpr.2023.03.697</a> (2023)	ISSN: 2214-7853		International
25	Investigation of dielectric properties of P (VDF-Trfe)-Nafion blended solutions in the microwave frequency region	Materials Today: Proceedings, <a href="https://doi.org/10.1016/j.matpr.2023.04.138">https://doi.org/10.1016/j.matpr.2023.04.138</a> (2023)	ISSN: 2214-7853		International
26	Dielectric characterization of	Materials Today: Proceedings, <a href="https://doi.org/10.1016/j.matpr.2023.0">https://doi.org/10.1016/j.matpr.2023.0</a>	ISSN: 2214-7853		International



	P(VDF-TrFE)-CuO nanocomposite solutions in the microwave frequency range using open-ended coaxial probe technique	<a href="#">4.321</a> (2023)			
27	Investigation of flexible electrochemical storage with Li+/PVdF-HFP/PEO blend	Polymer-Plastics Technology and Materials 62 (10), 1205-1222 (2023)	ISSN 2574-089X	2.44	International

#### 5.8. Papers presented at National / International Journals : 01 Conference proceedings

S.No	Title of the Paper	Names of the Conference/ Seminars	National/ International	Period
1	Synthesis and characterization of PVDF-La <sub>0.7</sub> Sr <sub>0.3</sub> MnO <sub>3</sub> nanocomposite films.	59 <sup>th</sup> DAE solid state physics symposium, IT University, Chennai, Tamil Nadu, India, AIP Conference proceedings	National	December 16-20, 2014.

#### 5.9. Sponsored research Projects: 03

S.No	Title	Agency	Period	Grant amount	Ongoing / Completed
1.	Design and fabrication of an air filter through polymer technology - A Societal Impact Project	VNRVJIET institute seed grant	1 year (2018-2019)	Rs. 22,337/-	Completed
2.	A hybrid and flexible magnetoelectric				

3.	trilayer structure for combined magnetic sensing and mechanical actuation applications	DST-SERB	3 Years 2020-2023	Rs: 18,30,000/-	Ongoing
	Exploring ferroelectric materials for photovoltaic applications	VNRVJIET institute seed grant	2021-2022	Rs: 3,50,000/-	Ongoing

#### 5.10 Consultancy Projects: 01

S.No	Title	Investigators	Agency	Period	Sanctioned Amount	Ongoing / Completed
01	Process Optimization of IPMCs for optimal functionality and in-air operability	Dr. C. Thirumal and Dr. T. Lakshmi Viveka	DRDO	2 years	Rs: 7,19,800	Ongoing

#### 6. Awards / Honors received:

- (1) Best poster award in National Science Day 2009, conducted by department of Physics, Osmania University
- (2) Best poster award in National Science Day 2010, conducted by department of Physics, Osmania University
- (3) Faculty excellence award received from **Ed & Immigo** in the year 2021.

(4) **Patent:** Fabrication of eco-friendly organic ferroelectric diisopropylammonium bromide films (*Indian patent Granted in 2020: 201641006148*)

#### 7. Motto:

*“Success doesn’t go away from you, until you go away from it”*