

**Dr. M. Sushmareddi, M. Sc., Ph. D.**

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**ASSISTANT PROFESSOR**

**Department of Physics,**

**Dr. B.R. Ambedkar University,**

**Etcherla, Srikakulam,**

**Andhra Pradesh, India- 532410.**

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**Professional  
Summary**

Dedicated and research-focused physicist with over six years of experience in teaching and research within the field of materials science. Possesses a strong publication record in peer-reviewed journals and a proven ability to mentor postgraduate students effectively. Committed to advancing academic excellence through innovative teaching methodologies and impactful research in nanomaterials and advanced characterization techniques. Skilled in integrating theoretical instruction with practical laboratory experience to cultivate deep understanding and hands-on proficiency among students. Eager to contribute to institutional development by aligning cutting-edge research with high-quality teaching practices.

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**Academic  
Qualifications**

2014-2018

**Ph.D. in Physics**  
**Andhra University, Visakhapatnam, India**

Supervisor: Prof. K. Samatha  
Thesis Title: "Systematic Study of Cr Substituted Copper-Cobalt Nano Ferrites".

2010-2012

**M.Sc. Physics**  
**M.R.P.G. College,**  
**Vizianagaram, Andhra Pradesh, India**

2007-2010

**B.Sc. (M.P.CS)**  
**Govt. Degree College (Men),**  
**Srikakulam, Andhra Pradesh**

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**Achievements**

2012

Qualified Andhra Pradesh State Eligible Test

2015

UGC-BSR Meritorious Fellowship Recipient (2015 – 2016).

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**Work history**

**Dr.B.R. Ambedkar University, Assistant Professor (Ad-hoc), Etcherla, India.**  
**2018-present**

- Delivered lectures and tutorials for M.Sc. Physics students in core subjects.

- Supervised advanced laboratory courses, focusing on materials synthesis and characterization.
- Developed and updated course content and lab manuals to align with curriculum reforms.
- Participated in syllabus design, academic audits, and exam paper evaluation.
- Cultivated relationships with external stakeholders to explore collaboration opportunities.
- Collaborated on interdisciplinary research projects with colleagues.
- Supported student learning through mentoring and remedial classes for CSIR NET/SET/GATE preparation.

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## Research Experience & Interests

- Synthesis and characterization of nanostructured and Functional materials and their applications.
  - Structural, Electrical, Dielectric, Optical and Magnetic Properties of Materials.
  - Magnetic storage devices and bio medical applications of magnetic materials.
  - Semiconductor Physics, and Device applications
  - cutting-edge research
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## Technical Skills

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|--------------------------|---|
| Experimental Techniques: | • XRD, UV-Vis, FTIR, SEM, VSM, TGA              |
| Software:                | • OriginPro, MATLAB, ImageJ, X'Pert High Score. |
| Documentation:           | • Microsoft Office, Research Publishing Tools.  |
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## Academic Responsibilities

- BOS Committee Member for curriculum revision
  - Internal Examiner for PG Practical Exams.
  - Internal Quality Assurance Committee Member, Dr.BRAU, Srikakulam.
  - MOOCS Coordinator, Dr.BRAU, Srikakulam.
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## Publications

### Journal publications

- 2018 **M. Sushma Reddi**, M. Ramesh, T. Sreenivasu, G.S.N. Rao, K. Samatha, "Investigation of Structural, magnetic and dielectric properties of Cr<sup>3+</sup> substituted Cu<sub>0.75</sub>Co<sub>0.25</sub>Cr<sub>x</sub>Fe<sub>2-x</sub>O<sub>4</sub> ferrite nanoparticles", **AIP Conference Proceedings**, 030202 (2018); doi: 10.1063/1.5032537
- 2017 S. Yonatan Mulushoa, M. Tulu Wegayehu, G. Tewodros Aregai, N. Murali, **M. Sushma Reddi**, B. Vikram Babu, T. Arunamani, K. Samatha, "Synthesis of spinel MgFe<sub>2</sub>O<sub>4</sub> ferrite material and studying its structural and morphological

properties using solid state method", **Chemical Science Transactions**, 6 (2017) 653-661.

- 2018 L. Seeta Devi, K. Vijaya Babu, B. Madhavalatha, **M. Sushma Reddi**, K. Samatha, V. Veeraiah, "Structural and Electrochemical Characterizations of Nanostructured Olivine  $\text{LiNi}_{1-x}\text{Co}_x\text{PO}_4$  ( $x=0.0$  and  $0.5$ ) Cathode Materials for Lithium-ion Batteries", **South African Journal of Chemical Engineering**, 25 (2018) 42-47.
- 2018 B. Vikram Babu, K. Vijaya Babu, G. Tewodros Aragai, L. Seeta Devi, B. Madhavi Latha, **M. Sushma Reddi**, K. Samatha, V. Veeraiah, "Structural, electrical and magnetic properties of  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  anode material for lithium-ion batteries", **Results in Physics**, 9 (2018) 284-289.
- 2020 B. Vikram Babu, **M. Sushma Reddi**, G. Chandana, K. Surendra, A. Rama Krishna, K. Samatha "Microstructural, impedance and conductivity studies of magnesium doped lithium titanate materials for Li-ion batteries", **Materials Today: Proceedings**, 21/10/2020, <https://doi.org/10.1016/j.matpr.2020.09.366>.
- 2020 B. Vikram Babu, **M. Sushma Reddi**, K. Surendra, A. Rama Krishna, K. Samatha, V. Veeraiah, "Synthesis, characterization and electrical studies of Nb-Substituted  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  anode materials for Li-ion batteries", **Materials Today: Proceedings**, 21/10/2020, <https://doi.org/10.1016/j.matpr.2020.09.310>.
- 2020 B. Vikram Babu, **M. Sushma Reddi**, G. Chandana, A. Rama Krishna, N. Gnana Praveena, V. Kondala Rao, M. Tulu Wegayehu, J. Suresh, B. Trinadh, K. Samatha, V. Veeraiah, "Microstructural and electrical properties of Mg substituted  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  synthesized by ceramic method", **AIP Conference Proceedings** 2269, 030112 (2020); <https://doi.org/10.1063/5.0019597>.
- 2020 K. Surendra, B. Vikram Babu, **M. Sushma Reddi**, G. Chandana, A. Rama Krishna, D. Deenabandhu, A.D.P. Rao, "Impact of Niobium on Lithium - Titanate Anode Materials of Lithium-ion Batteries", **Solid State Technology**, Vol. 63 No. 1s (2020)
- 2020 PK Rao, S Srinivasulu, BV Babu, **MS Reddi**, AR Krishna "Anticancer and antibacterial activity of green synthesized silver nanoparticles using *Adina cordifolia*" **Materials Today: Proceedings** 43, 1700-1706
- 2020 PK Rao, BV Babu, **MS Reddi**, KA Devi, AR Krishna, "Biologically synthesized silver nanoparticles from *shorea robusta* L. plant and associated antibacterial property" **Materials Today: Proceedings** 43, 1819-1824
- 2022 P. Koteswara Rao, B Vikram Babu, A. Rama Krishna, **M. Sushma Reddi**, B. Sathish Mohan, K. Anjani Devi, U. Susmitha, T. Raghava Rao, "Green Synthesis of Silver Nanoparticles using *Litsea glutinosa* L. Leaves and Stem Extracts and their Antibacterial Efficacy" **Journal of Water and Environmental Nanotechnology**, Volume 7, Issue 4, 2022, 363-369.
- 2022 B. Vikram Babu, **M. Sushma Reddi**, A. Rama Krishna, B. Sathish Mohan, G. Chandana, K. Anjani Devi, B. Sridhar & K. Samatha, " Structural, Impedance and Modulus Studies of Effect of Magnesium (Mg) Substitution on Spinel  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  Anode Materials" **Transactions on Electrical and Electronic Materials**, Volume 23, pages 499–508, (2022).
- 2022 D. Vijaya Lakshmi , B. Vikram Babu, A. Rama Krishna, **M. Sushma Reddi**, M.K. Raju, B. Sathish Mohan, B. Sridhar , P.V. Lakshmi Narayana "Structural, morphological and vibrational properties of  $\text{Li}_4\text{Ti}_{5-x}\text{Nb}_x\text{O}_{12}$  anode

materials" **Materials Science for Energy Technologies**, Volume 5, 2022, Pages 30-35, <https://doi.org/10.1016/j.mset.2021.11.004>.

- 2025 Muni Krishnaiah. A., Vasavi G.S.S. Anjaneya, Santhosh Kumar R., Sushmareddi M., Subba Rao M., Gnana Kiran M., Nageswara Rao Medikondur, Subba Rao Yarlagadda, Anees A. Ansari, and Virupakshi Prabhakar "Surfactant influence on morphology, optical, photocatalysis and magnetic performance of K<sub>2</sub>BiFe<sub>2</sub>O<sub>5</sub> nanomaterials obtained via Sol-gel method." **ECS Journal of Solid State Science and Technology**, Volume 14, Number 9, 2025, DOI: 10.1149/2162-8777/adfe1c.

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**Conferences/  
Seminars/  
Workshops  
Presented &  
Participated**

- 2014 National Conference on "Advanced Functional Materials and Compute Applications in Materials Technology (CAMCAT-2014)" during December 18<sup>th</sup> and 19<sup>th</sup>, 2014 Organized by the Dept. of Physics and Computer Science, Dr. V. S. Krishna Govt. Degree and P.G. College (A), Visakhapatnam.
- 2016 3<sup>rd</sup> International conference on "Recent Innovations in Science, Engineering and Management (ICRISEM-16)" organized by Sri Venkateswara college of Engineering and Technology, Srikakulam, Andhra Pradesh on 27-feb-2016.
- 2016 Awareness workshop on "Experimental Research Facilities in Physics" organized by Department of Basic Sciences & Humanities and Social Sciences, JNTUK-University College of Engineering Vizianagaram.
- 2016 Three days National Level Workshop on "Nanotechnology- Current and Future Scope (NCFS – 2016)" organized by Department of Mechanical Engineering, Sri Sivani College of Engineering on 5-7<sup>th</sup> October, 2016.
- 2016 2<sup>nd</sup> A.P. Science Congress, 2016 at Andhra Pradesh Academy of Sciences, Amaravati held at P.B. Siddhartha College of Arts and Sciences, Vijayawada during 7-9<sup>th</sup> November 2016.
- 2016 Two days national seminar on "Recent trends in nano science and nano technology on 26<sup>th</sup> & 27<sup>th</sup> November 2016-Rtnsnt-2016" organized by Department of Physics, M.R. College (autonomous), Vizianagaram.
- 2017 The Indian Science Congress Association held at Sri Venkateswara University, Tirupati from January 3 to 7, 2017.
- 2017 One day national seminar on "Recent Advances in Chemical Sciences on 26<sup>th</sup> October 2017-RACS-2017" organized by Department of Chemistry, Dr. B.R. Ambedkar University, Srikakulam.
- 2017 A.P. Science Congress, 2017 on 7-9<sup>th</sup> November 2017 held at Andhra University, Visakhapatnam.
- 2017 2<sup>nd</sup> International Conference on Condensed Matter and Applied Physics on 24-25<sup>th</sup> November, 2017 held at Bikaner, Rajasthan.
- 2018 National workshop on advanced techniques related to analytical, molecular, material testing and statistical tools on 27-29<sup>th</sup> march, 2018 held at Andhra University, Visakhapatnam.

- 2017 National seminar on "Physics and Chemistry of Non-Crystalline Materials" on 1<sup>st</sup> and 2<sup>nd</sup> December-2017, at Kakani Venkata Ratnam College, Nandigama, Andhra Pradesh.
- 2018 Two days national seminar on "Emerging Trends in Materials Science and Technology (NSETMST-2018)" held on 9<sup>th</sup> and 10<sup>th</sup> March, 2018 at Department of Physics, Andhra University, Visakhapatnam.
- 2019 Attended for the faculty development programme from 21-01-2019 to 27-01-2019 at Dr. B.R. Ambedkar University, Etcherla, Andhra Pradesh organized by MGNCRE.
- 2019 Participated in International Conference on "Water, sanitation and hygiene (WASH-2019)" held on 23<sup>rd</sup>-24<sup>th</sup> February, jointly organized by Departments of Biotechnology, Chemistry, Social work and HSS and Basic sciences, Dr. B.R. Ambedkar University, Etcherla.
- 2019 A.P. Science Congress, 2019 on 28-30<sup>th</sup> November 2019 held at Dr. B. R. Ambedkar University, Srikakulam.
- 2020 Participated in the one-week AICTE sponsored short term training programme on "Synthesis Characterization of Applications of Nanomaterials" during 24<sup>th</sup> to 29<sup>th</sup> August-2020.
- 2020 Participated in International Conference on Science, Engineering & Technology (ICSTE-20) on 6<sup>th</sup> December-2020 at Tirupati.
- 2020 National seminar on "Recent trends in Nanoscience & Nanotechnology" organized by the Department of Nanotechnology, Acharya Nagarjuna University on 30<sup>th</sup> & 31<sup>st</sup> January, 2020.
- 2020 National Workshop on "Assessment & Accreditation of HEI's & Colleges" on 3<sup>rd</sup> Feb-2020, organized by Internal Quality Assurance cell (IQAC), Dr. B. R. Ambedkar University, Srikakulam.
- 2020 National Workshop on "Women in Science" organized by College of Science, Dr. B. R. Ambedkar University, Srikakulam on 28<sup>th</sup> February, 2020.
- 2020 National Webinar on "Recent Advances in Materials for Sensing and Energy Harvesting" on 22<sup>nd</sup> June-2020, organized by Dept. of Physics & Dept. of S&H of VFSTR (Deemed to be University), Guntur.
- 2021 Participated in Faculty Development Programme on "Advances in Nanomaterials & Single Crystal on Practical Device Applications" Organized by Dept. Of Physics, Adikavi Nannaya University on Aug 4<sup>th</sup> 2021.
- 2022 One day national webinar on "Agrinannotechnologies & Dielectric Materials" Organized by Dept. Of Physics, University College of Science & Technologies, ANUR, Rajamahendravaram on Aug 4<sup>th</sup> 2022.
- 2023 Oral Presentation at the National Seminar on Advanced Functional Materials, organized by Dept. Of Chemistry, Acharya Nagarjuna University, Guntur on September 2023.
- 2023 Participated in the one-week training programme on "Synthesis Characterization of Applications of Nanomaterials" organised by Jawaharlal Nehru University Hyderabad, during 24<sup>th</sup> to 29<sup>th</sup> August-2023.

- 2024 Participated in International conference on "Renewable Energy Research & Education" organized by Government Autonomous college, Rajamahendravaram, Andhra Pradesh on 8<sup>th</sup>-10<sup>th</sup> Feb-2024.
- 2025 Participated 2 days International Webinar on "Research Methodology in Materials Sciences (IWRMMS-2025)" organised by Govt. Degree College, Eluru & SVRM College, Nagaram on 23<sup>rd</sup> & 24<sup>th</sup> Jan-2025.
- 2025 Participated in Two days National Seminar on "Computer Interfaced Physics experiments using EXPEYES" organized by Dept. of Nuclear Physics, Andhra University, on 10<sup>th</sup> and 11<sup>th</sup> March-2025.

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### Conferences/ Seminars/ Workshops Organized

- 2020 National Webinar on "Recent Activities of Nanomaterials" on 06-08-2020, Organized by Department of Physics, Dr. B.R. Ambedkar University, Srikakulam.
- 2025 3 – Day National Level Faculty Development Programme on Quantum Computing Organized by Department of Physics, Dr. B.R. Ambedkar University, Srikakulam, held from 10<sup>th</sup> to 12<sup>th</sup> September, 2025 sponsored by PM-USHA Scheme.

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### Languages

Telugu  
English

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### References

- Prof. K. Samatha** Department of Physics, Andhra University, Visakhapatnam.  
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Contact: +91 9441044529.
- Dr. B. Parvatheeswara Rao** Department of Physics, Andhra University, Visakhapatnam.  
Email: [bprao250@gmail.com](mailto:bprao250@gmail.com)  
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