Dr. M. Veena
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BIOSKETCH

Dr. M. Veena is a materials science researcher specializing in oxides and 2D materials for gas and electrochemical sensing applications. Her research is centered on developing advanced sensing materials to detect analytes relevant to environmental and healthcare monitoring. Extending her expertise in materials science, she also works on designing and tuning oxides and layered materials for electrocatalysis and energy storage. Beyond research, she is deeply passionate about teaching and mentors engineering graduates through fundamental physics tutorials, encouraging them to appreciate the pivotal role of science in engineering.

Educational Profile

- **Doctor of Philosophy (Ph.D.)**
  Year of Passing: 2020
  Thesis title: Vanadium Oxide based Hierarchical Nanostructures for Gas Sensor Application
  Thesis Supervisor: Dr. M. Sridharan, Professor, School of Electrical and Electronics Engineering, SASTRA Deemed to be University, Thanjavur
- **Master of Science (M. Sc.,) in Materials Science**
  Institute: PSG College of Technology, Coimbatore
  Year of Passing: 2014
  Project Title: Studies on lead free ferroelectric materials synthesized by sol-gel spin coating technique
  Project Supervisor: Dr. Subir Kumar Roy, Scientist 'E', Ceramics and Composite Group, DMRL, DRDO, Hyderabad, India
- **Bachelor of Science (B.Sc.) in Physics**
  Institute: Kongunadu Arts and Science College, Coimbatore
  Year of Passing: 2012

Positions Held

Sep. 2024 – Present	Assistant Professor Department of Nanoscience & Technology PSG Institute of Advanced Studies Peelamedu, Coimbatore
Sep.2021 – Sep. 2024	UGC - Dr. D. S. Kothari Post-Doctoral Fellow Mentor: Dr. N. Ponpandian Professor and Head Department of Nanoscience and Technology Bharathiar University Coimbatore – 641 046
Oct. 2018 – Dec. 2018	Visiting Research Fellow

	Mentor: Prof. Kazuyoshi Tsuchiya Micro/Nano Technology Centre, Tokai University, Japan
Dec. 2017 – Feb. 2018	Visiting Project Fellow Mentor: Dr. Arun K. Prasad Nanomaterials Characterization & Sensors Section IGCAR, Kalpakkam, India

Research Areas:

- Thin Films, Metal Oxides
- Gas Sensors
- Electrochemical Sensors
- Electrocatalytic Water Splitting
- Supercapacitors

Awards & Achievements

- Awarded with **Dr. D. S. Kothari Post-Doctoral Fellowship** (2021 - 2024). Funding Body – UGC, New Delhi, India.
- Awarded with **SERB National Post-Doctoral Fellowship** (2021-2023) Funding Body – SERB, DST, New Delhi, India.
- Awarded with **Founder-Chancellor's Award for Best Doctoral Dissertation** (Science Stream) - 2020" SASTRA Deemed to be University, Thanjavur, India.
- **Best Poster Award** - International Conference on Nanomaterials for Electro-Catalytic Technologies (I-CONECT 2023), IIT Delhi, New Delhi, India

Invited Talks

1. **53rd MNTC lecture** on "Template Free Synthesis of Vanadium Oxide Nanostructures for Chemiresistive Sensing Application", on 22nd October 2018, TOKAI University, Japan (Offline)
2. **MNTC Special Lecture** on "Vanadium Pentoxide (V_2O_5) Nanosheets for Ammonia Sensing Application", on 22nd December 2018, TOKAI University, Japan (Offline)
3. **Invited Talk** on "Basics of X-Ray Diffraction (XRD)", Department of Physics, Sri G.V.G. Visalakshi College for Women, Udumalpet, Tamil Nadu on 30th May 2022 (Online)
4. **Invited talk** on "Advanced Materials Characterization Techniques", organized by Smart Manufacturing Club, Department of Mechanical Engineering, Dr. N. G. P. Institute of Technology, Coimbatore on 13th November, 2021 (Online)

Journal Publications

1. **Veena Mounasamy**, Keerthana Murugan and Ponpandian Nagamony, "Electrochemical synergy for energy storage: uncovering the potential of h-BN and V2C MXene integration", Journal of Alloys and Compounds, 2025 (SCI.IF: 5.8)
2. **Veena Mounasamy**, Keerthana Murugan and Ponpandian Nagamony, "Exploring the Enhanced Electrochemical Activity of V_2O_5/h-BN: Investigating Its Structural Dynamics for Asymmetric Supercapacitors", ACS Applied Electronics Materials, 2024 (SCI. IF: 4.3)
3. **Veena Mounasamy**, Srividhya Ganesan and Ponpandian Nagamony, "Well-defined 2D transition vanadium pentoxide (V_2O_5) flat nanorods with large-scale synthesis feasibility as an electrocatalyst for the oxygen evolution reaction (OER)", Energy Advances, 2023, 2, 12-33 (SCI. IF: 3.2)

4. **Veena Mounasamy**, Ganesh Kumar Mani, Kazuyoshi Tsuchiya, and Sridharan Madanagurusamy, "Preparation of free-standing V_2O_5 nanosheets for ammonia sensing application: A potential candidate for flexible sensors", Journal of Science: Advanced Materials and Devices, 2022, 7, 100415 (SCI. IF: 6.7)
5. **Veena Mounasamy**, Ganesh Kumar Mani, Kazuyoshi Tsuchiya, and Sridharan Madanagurusamy, "Nanoimprint assisted free standing porous vanadium oxide nanosheet based ammonia sensor", Applied Surface Science, 2021, 541, 148271 (SCI. IF: 6.3)
6. **Veena Mounasamy**, Ganesh Kumar Mani, and Sridharan Madanagurusamy "Vanadium Oxide based Gas and Vapour Sensors: A Review on State of the Art", Microchimica Acta, 2020, 187, 253 (SCI. IF: 5.3)
7. **Veena Mounasamy**, Ganesh Kumar Mani, Dhivya Ponnusamy, Kazuyoshi Tsuchiya, P.R. Reshma, Arun K Prasad, and Sridharan Madanagurusamy "Investigation on CH_4 Sensing Characteristics of Hierarchical V_2O_5 Nanoflowers Operated at Relatively Low Temperature using Chemiresistive Approach", Analytica Chimica Acta, 2020, 1106, 148-160 (SCI. IF: 5.7)
8. **Veena Mounasamy**, Ganesh Kumar Mani, Dhivya Ponnusamy, Kazuyoshi Tsuchiya, P.R. Reshma, Arun K Prasad, and Sridharan Madanagurusamy, "Cadmium metavanadate mixed oxide nanorods for the chemiresistive detection of methane molecules", New Journal of Chemistry, 2020, 44 (29), 12473-12485 (SCI. IF: 2.7)
9. **Veena Mounasamy**, Ganesh Kumar Mani, Dhivya Ponnusamy, Kazuyoshi Tsuchiya, Arun K Prasad, and Sridharan Madanagurusamy, "Sub-ppm level detection of trimethylamine using V_2O_3-Cu_2O mixed oxide thin films", Ceramics International, 2019, 45 (15), 19528–19533 (SCI. IF: 5.1)
10. **Veena Mounasamy**, Ganesh Kumar Mani, Dhivya Ponnusamy, Kazuyoshi Tsuchiya, Arun K Prasad, and Sridharan Madanagurusamy, "Network Mixed Metal Oxide (V^{+4} and Ti^{+4}) Nanostructures as Potential Material for Trimethylamine Detection", New Journal of Chemistry, 2019, 43 (28), 11069–11081 (SCI.IF: 2.7)
11. **Veena Mounasamy**, Ganesh Kumar Mani, Dhivya Ponnusamy, Kazuyoshi Tsuchiya, Arun K Prasad, and Sridharan Madanagurusamy, "Template-free synthesis of vanadium sesquioxide (V_2O_3) nanosheets and their room-temperature sensing performance", Journal of Materials Chemistry A, 2018, 6, 6402–6413 (SCI. IF: 10.7)
12. G. Jeevitha, R. Abhinayaa, D. Mangalaraj, N. Ponpandian, P. Meena, **Veena Mounasamy**, Sridharan Madanagurusamy, "Porous reduced graphene oxide (rGO)/WO3 nanocomposites for the enhanced detection of NH_3 at room temperature, Nanoscale Advances 1, 2019, 1799–1811 (SCI.IF: 4.6)
13. Subir Roy, Rajalaxmi Maharana, **Veena Mounasamy**, Atul Kumar, Sandip Bysakh, S.V. Kamat, "Development of crack free BLT thick films by chemical solution deposition technique", Thin Solid Films, 2015, 589, 686–691 (SCI. IF: 2.0)
14. Srividhya Ganesan, Abinaya Muruganandham, **Veena Mounasamy**, Veera Prabu Kannan, and Sridharan Madanagurusamy, "Highly Selective Dimethylamine Sensing Performance of TiO_2 Thin Films at Room Temperature", Journal of Nanoscience and Nanotechnology, 2020, 20, 1–9

List of Book Chapters

1. **Veena Mounasamy**, Shanmuganathan Keerthana, Nagamony Ponpandian, "Chapter 3 – Spectroscopic and microscopic characterizations of chitosan nanoparticles", Elsevier, 2025, 419-434
2. S Sivaselvam, **Veena Mounasamy**, Nagamony Ponpandian, "Chapter 14 - Metal organic framework based photodynamic therapy for cancer treatment", in the book titled "Nanophototherapy", Elsevier, 2025, 419-434
3. R. Abhinayaa, S. Sivaselvam, **Veena Mounasamy**, N. Ponpandian, "Chapter 13 – Functionalized Magnetic Nanoparticles for Bioseparation Applications", Wiley Online Library, 2024, 417 - 437

4. **Veena Mounasamy**, Ponpandian Nagamony, "Nanocomposites of Carbon as Electrocatalyst", in the book titled "NanoCarbon: A Wonder Material for Energy Applications. Engineering Materials", Springer, Singapore, 2024, 219–236
5. **Veena Mounasamy**, Ponpandian Nagamony, "Chapter 3 - Synthesis of metal oxide composite nanofibers by electrospinning and its application in gas and VOC sensors", in the book titled "Complex and Composite Metal Oxides for Gas, VOC and Humidity Sensors Volume 2: Technology and New Trends", Elsevier, 2024, 61-90
6. Karutha Pandian Divya, **Veena Mounasamy**, Nagamony Ponpandian, "Chapter 19 – Functionalized magnetic nanosystem-based electrochemical sensors for medical diagnostic tools and devices", in the book titled "Functionalized Magnetic Nanosystems for Diagnostic Tools and Devices Current and Emerging Research Trends", Elsevier, 2024, 559-585
7. Shanmuganathan Keerthana, **Veena Mounasamy**, Nagamony Ponpandian, "Chapter 12 – Perovskites (ABO_3) and their prospects for gas sensor application", in the book titled "Complex and Composite Metal Oxides for Gas, VOC and Humidity Sensors", Elsevier, 2024, 355-383S

Conference Papers/Proceedings:

1. Veera Prabhu Kannan, Veena Mounasamy, and Sridharan Madanagurusamy, "Highly volatile dimethylamine vapour sensing studies using titanium-vanadium mixed oxide thin films", Materials Today: Proceedings, 2021, 47, 1155-1158
2. Veena Mounasamy, Ganesh Kumar Mani, Sujithra Sukumaran, Dhivya Ponnusamy, Kazuyoshi Tsuchiya, Arun K Prasad, and Sridharan Madanagurusamy, "Vanadium Oxide Nanoparticles for Dimethylamine Vapour Detection", 2018 Int. Symp. Micro-Nano Mechatronics Hum. Sci., IEEE Xplore Conference Proceedings, 2018: pp. 1–5