

C. REVATHI

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National Post-Doctoral fellow (DST-SERB) - Functionalized MWCNTs and polymer modified Manganese di oxide (MnO_2) nanostructures (rods, sheets and porous) based printed electrodes for trace level detection of nitrite (NO_2^-) in ground water.



Area of research interest

Preparation and investigate the electro catalytic behaviors of semiconducting and carbon based nanomaterials; fabrication of strip based electrochemical bio sensors for the applications of detecting drug molecules, heavy elements in body fluids and ground water.

Academic particulars

Ph.D - Physics, Bharathiar University, Coimbatore, Tamil Nadu, India. **2017.**

Synthesis, Characterization and Testing of MnO_2 /Polymer and MnO_2 /Multiwalled Carbon Nanotube Nanocomposites for Non - Enzymatic Electrochemical Biosensors (Advisor: Dr. R.T. Rajendrakumar)

M.Phil - Physics, Bharathiar University, Coimbatore, Tamil Nadu, India. **2011.**

Synthesis and characterization of ZnO and Doped ZnO microstructures and its photo catalytic applications (Advisor: Dr. R.T. Rajendrakumar)

M.Sc - Materials Science, Anna University, Chennai, Tamil Nadu, India. **2009.**

Synthesis and characterization of pure ZnO and Bi_2O_3 doped ZnO (Advisor: Dr. K.Vishista)

Additional Courses

- Completed 1 year *PG Diploma in Nanotechnology* from Bharathiar University – 2010
Antibacterial studies of Nanostructured Ag thin films (Advisor: Dr. R.T. Rajendrakumar)
- “*Heat treatment and failure Analysis*”, Two Weeks training in Advanced Training Institute in Guindy, Chennai, (2008)

Research Articles published

- *Materials Science in Semiconductor Processing*: **C.Revathi**, G. Mohan Rao, R.T. Rajendrakumar, Synthesis and electro catalytic properties of manganese di oxide for non-enzymatic hydrogen peroxide sensing with Vol. No.31, Page No.709 - 714 and Year of Publication: 2015 published by Elsevier.

- *Journal of the Electrochemical Society*: **C.Revathi**, K. Rajavel. M. Saranya, R.T. Rajendrakumar, MWCNT Based Non - Enzymatic H₂O₂ Sensor: Influence of Amine Functionalization on the Electrochemical H₂O₂ Sensing with Vol. No. 163 (13), Page No. B1- B6 and the Year of Publication: 2016 published by Electrochemical Society.
- *Electroanalysis*: **C.Revathi**, R.T. Rajendrakumar, Electro catalytic properties of α , β , γ , ξ - MnO₂ and γ - MnOOH nanoparticles: Role of polymorphs on enzyme free H₂O₂ sensing with DOI: 10.1002/elan.201600608 and the Year of publication: 2017 published by Wiley.
- *Sensing and bio sensing research*: M. Manikandan, S. Dhanuskodi, N. Maheswari, G. Muralidharan, **C. Revathi**, R.T. Rajendra Kumar, G. Mohan Rao, High performance supercapacitor and non-enzymatic hydrogen peroxide sensor based on tellurium nanoparticles with Vol. No. 13, Page No. 40 and the Year of Publication: 2017 published by Elsevier.

Conference Publications/proceedings

- **C.Revathi**, K. Rajavel, K.S. Ranjith and R.T. Rajendrakumar, 'Synthesis and antibacterial studies of nanostructured Ag thin films', *Advanced Materials Research Vol. 678 (2013) pp 291-296*.
- S. Bakyalakshmi, **C.Revathi**, R.T. Rajendrakumar 'Low Temperature Synthesis of MnO₂ particles for H₂O₂ sensing', National Seminar on Advanced Materials Processing & Applications (NSAMPA-2012) - *proceedings*.
- **C.Revathi**, R.T. Rajendra Kumar, 'Synthesis and Characterization of MnO₂ nano particles for hydrogen peroxide sensing', International Symposium on Macro - and Supramolecular Architectures and materials (MAM -12) - *proceedings*.
- **C.Revathi**, S. Bagyalakshmi, K.S. Ranjith, R.T. Rajendrakumar, 'Morphology Dependent Electrochemical Sensing Properties of Metal oxide Nanoparticles', National conference on advanced functional materials (NCAFM) 30-31st January, 2014 (NCAFM – 2014) - *proceedings*
- **C. Revathi**, K. Rajavel, R.T. Rajendrakumar, 'Ethylene diamine Functionalized Carbon Nanotubes For Glucose Sensing' Seventh ISSS International Conference on Smart Materials, Structures And Systems (ISSS 2014) proceedings, July 08-11, 2014
- **C. Revathi**, R.T. Rajendrakumar, 'Electrochemical behavior of β -MnO₂ and MnOOH nanorods in different electrolytes', 59th Solid State Symposium (DAE – SSPS2014), 16-12-14 to 20-12-14, *AIP proceedings*

Awards and Honors

- Rajiv Gandhi national fellowship - JRF (2016-17), UGC, New Delhi, India. 'Phase dependent activity of MnO₂ nanoparticles and their composites on the performance of electrochemical sensing of Nimesulide drug'.
- **C.Revathi**, R.T. Rajendrakumar, 'Enzyme free H₂O₂ sensor based on MnO₂ - Polyvinyl pyrrolidone (PVP) Composites', National Conference on Emerging Biomaterials (NCEB 2016) - *best poster*
- S. Bakyalakshmi, **C.Revathi**, R.T. Rajendra Kumar, 'Low Temperature Synthesis of MnO₂ particles for H₂O₂ sensing' National Seminar on Advanced Materials Processing & Applications (NSAMPA-2012) - *best poster*