

Dr. CHANDAN H.R

Off: Centre for Nano and Material Sciences,
Jain (Deemed-to-be-University), Jain global campus,
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Objective:

Looking forward to work in a competitive and challenging environment with continuous progress and contribute to self and institutional growth through research. Reduce the impact on environment and improve the existing and new field of chemistry for development of society.

Academics:

<i>Ph. D In Chemistry</i>	<i>June 2016</i>	<i>Centre for Nano and Material Sciences, Jain University</i>
<i>Master of Science in General Chemistry</i>	<i>July 2010</i>	<i>University of Mysore</i>
<i>Bachelor of Science (B. Sc)</i>	<i>July 2008</i>	<i>JSS College of Arts, Commerce and Science (University of Mysore)</i>
<i>Diploma in IT</i>	<i>2008</i>	<i>NIIT Ltd</i>

Professional Experience:

Assistant professor at Centre for Nano and Material, Jain University 2022- present
Scientist ‘C’ at Centre for Nano and Material, Jain University 2018-2022
Postdoctoral Fellow at King Mongkut’s University of
 Technology Thonburi, Bangkok, Thailand 2019-2021
Senior Research Associate at Centre for Nano and Material, Jain University- 2015- 2018
Senior Research Fellow at Centre for Nano and Material sciences, Jain University - 2013-2015
Co-investigator for University grant Commission (UGC)
 sponsored Minor project- 2010-2012
 Worked as the Asst. Prof. of Chemistry, Post graduate DOS of Studies in Chemistry,

Research Experience:

- Screen printed electrodes for sensing applications
- Interdisciplinary studies related to sensor using IoT (AI) interface
- Electrochemical hydrogen evolution reaction
- Electrochemical detection of toxins by using biomolecules
- Synthesis of Nano materials including quantum dots (CdSe, CdSe/CdS, CdSe/ZnS, CdSe/ZnSe, CdTe/CdS... etc)
- Synthesis of doped, undoped metal oxides with different morphology
- Synthesis of carbon materials using different sources (natural and synthetic)
- Design and printing of paper based microfluidic device
- Bio conjugation chemistry of the quantum dots for bio sensing application.
- Immobilization of the enzymes on the surface of glass, membrane...etc
- Conjugated monoclonal antibody and used for detection of *S. aureus TNase* using simple strip model.
- Surface modification of nanomaterials

Paper published/ Communicated:

- CG Sanjayan¹, **Chandan Hunsur Ravikumar**¹, RG Balakrishna, Perovskite QD based paper microfluidic device for simultaneous detection of lung cancer biomarkers–Carcinoembryonic antigen and neuron specific enolase, Chemical Engineering Journal, 2023, 464, 142581. **(IF:16.44)**
- Naveed Alam, **Chandan Hunsur Ravikumar**, Muralikrishna Sreeramareddygar, Mithran Somasundrum, Weresak Surareungchai, Label-free ultra-sensitive colorimetric detection of hepatitis E virus based on oxidase-like activity of MnO₂ nanosheets, 2023, 415, 709-713 **(IF: 4.48)**
- **Chandan Hunsur Ravikumar**, S Ramu, S Mohan, RG Balakrishna, MoSe₂ as counter electrode for quantum dots sensitized solar cells, *Journal of Materials Science: Materials in Electronics*, 2022, 33 (15), 12201-12209. **(IF: 2.52)**
- Praveen Kumar Gopi, Duy Ba Ngo, Shen-Ming Chen, **Chandan Hunsur Ravikumar**, Weresak Surareungchai, High-performance electrochemical sensing of hazardous pesticide

Paraoxon using BiVO₄ nano dendrites equipped catalytic strips, *Chemosphere*, 2022, 288, 132511(**IF: 7.3**)

- Praveen Kumar Gopi, Subburaj Srinithi, Shen-Ming Chen, **Chandan Hunsur Ravikumar**, Designing of cerium-doped bismuth vanadate nanorods/functionalized-MWCNT nanocomposite for the high toxicity of 4-cyanophenol herbicide detection in human urine sample, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2022, 639, 128372. (**IF: 4.63**)
- Praveen Kumar Gopi, Subburaj Srinithi, Shen-Ming Chen, **Chandan Hunsur Ravikumar**, Simple construction of GdBiVO₄ assembled on reduced graphene oxide for selective and sensitive electrochemical detection of chloramphenicol in food samples, *New Journal of Chemistry*, 2022, 46, 1551. (**IF: 3.5**)
- **Chandan Hunsur Ravikumar**, Nikhil Maroli, Bhakti Kulkarni, Ponmalai, R Geetha Balakrishna, Heterostructure of CsPbBr₃-CdS perovskite quantum dots for enhanced stability and charge transfer, *Material Science and Engineering B*, 2022, 275, 115573 (**IF: 4.01**)
- Praveen Kumar Gopi, Srinithi Subburaj, Shen-Ming Chen, Wu Chia-Jung, **Chandan Hunsur Ravikumar**, Pr-TiO₂ Decorated Functionalized-Carbon Nano Tubes for Highly Selective Detection of Tryptophan in Pharmaceutical Samples for Neurotransmitter Treatment, *Journal of electrochemical Society*, 2021, 168, 57532. (**IF: 4.31**)
- Praveen Kumar Gopi, **Chandan Hunsur Ravikumar**, Shen-Ming Chen, Design and Tailoring of Bismuth Vanadate Impregnated on Molybdenum/Graphene Oxide Sheets for ultrasensitive Detection of Environmental pollutants, *Ecotoxicology and Environmental Journal*, 2021, 211, 111934. (**IF: 6.29**)
- Praveen Kumar Gopi, Ganesh Kesavan, Shen-Ming Chen, **Chandan Hunsur Ravikumar**, CdS quantum dots anchored on reduced graphene oxide for the electrochemical detection of MTZ for real time analysis in milk sample, (2021), *New Journal of Chemistry*, 45 (6), 302 (**IF: 3.52**)
- **Chandan Hunsur Ravikumar**; Nair G, Vishnu; MP, Raghavendra; Surareungchai, Werasak; Thakur, Archana; Balakrishna, R Geetha Biomass derived carbon dots decorated ssDNA for a 'Turn-on' Fluorescent Assay for detection of Staphylococcus aureus MNase, , *New journal of chemistry*, 2021, 45, 13, 5890. (**IF: 3.5**)
- **Chandan Hunsur Ravikumar**, Shwetharani R and Geetha R. Balakrishna, **Surface Modified Glass Substrate for Sensing E. coli using Highly Stable and Luminescent CdSe/CdS Core Shell Quantum Dots**, *Journal of Photochemistry and photobiology B*, 2020, 204, 111799. (**IF: 6.81**)

- SM Anush, **Chandan Hunsur Ravikumar**, BH Gayathri, N Manju, B Vishalakshi, Graphene oxide functionalized chitosan-magnetite nanocomposite for removal of Cu (II) and Cr (VI) from waste water, *International Journal of Biological Macromolecules*, 2020, 164, 4391-4402 (IF: 6.93)
- J Kusuma, **Chandan Hunsur Ravikumar**, RG Balakrishna Conjugated molecular bridges: A new direction to escalate linker assisted QDSSC performance, *Solar Energy*, 2020, 194, 74-78. (IF: 5.7)
- **Chandan Hunsur Ravikumar**, Manjunath Ira Gowda, Geetha Balakrishna R, An “OFF–ON” quantum dot–graphene oxide bioprobe for sensitive detection of micrococcal nuclease of *Staphylococcus aureus*. *Analyst*, 2019, 144, 3999-4005 (IF-4.5)
- R Shwetharani, **Chandan Hunsur Ravikumar**, M Sakar, Geetha R Balakrishna, Kakarla Raghava Reddy, Anjanapura V Raghu, Photocatalytic semiconductor thin films for hydrogen production and environmental applications, *International Journal for Hydrogen Energy*, 2019, 45, 18289-18308. (IF 5.81)
- SM Anush, **Chandan Hunsur Ravikumar**, B Vishalakshi, Synthesis and metal ion adsorption characteristics of graphene oxide incorporated chitosan Schiff base, *International journal of biological macromolecules*, 126, 908-916, 2019. (IF 6.93)
- Kusuma J, R. Geetha Balakrishna*, Siddappa Patil, Jyothi M S, **Chandan Hunsur Ravikumar**, Shwetharani R, Impact of Graphene Nanoribbons as Conducting Path in Quantum Dot Sensitized Solar Cells, *Solar energy materials and solar cells*, 2018, 183, 211-219. (IF- 7.2)
- Vishaka H, Manva S, **Chandan Hunsur Ravikumar** and Geetha Balakrishna R, Paper based field deployable sensor for naked eye monitoring of copper (II) ions; elucidation of binding mechanism by DFT studies, *Spectrochimica Acta A: Molecular and Biomolecular spectroscopy*, 223, 117291, 2019. (IF-3.75)
- **Chandan H. R**, Jessica Schiffman and Geetha R. Balakrishna, Quantum dots as fluorescent probes: synthesis, surface chemistry, energy transfer mechanism and applications, *Sensors and Actuators B: Chemical*, 2018, 258, 1191–1214. (IF- 7.5)
- Shwetha Rani R, Sakar Mohan, **Chandan H R** and Geetha Balakrishna R, Observation of Simultaneous Photocatalytic Degradation and Hydrogen Evolution on the Lanthanum Modified TiO₂ Nanostructures, *Materials Letter*, 2018, 220, 133-135. (IF-3.42)
- **Chandan Hunsur Ravikumar**, Vishnu Nair G, Muralikrishna S, Nagaraju D. H. and R. Geetha Balakrishna, Nanoflower like structures of MoSe₂ and MoS₂ as efficient catalyst for hydrogen evolution, *Materials Letter*, 2018, 220, 163-165. (IF- 3.42)

- **Chandan Hunsur Ravikumar**, Sakar Mohan, Ashesh Mahto, Ravishankar T N, Ramakrishnappa, Sergio Dupont, and Geetha R Balakrishna, Observation of oxo-bridged yttrium in TiO₂ nanostructures and their enhanced photocatalytic hydrogen generation under UV/Visible light irradiations, *Materials Research Bulletin*, 2018, 104, 212-219. (IF-4.65)
- Renuka RM, Achuth J, **Chandan H R**, Venkataramana. M, and Kadirvelu. K, Silica functionalized Quantum dot based Aptamer-Sandwich assay for rapid detection of Escherichia coli O157:H7 and its evaluation onto contaminated food samples. *New journal of Chemistry*, 2018, 42, 10807-10817. (IF-3.59)
- Anush, S.M., Vishalakshi, B., **Chandan, Hunsur Ravikumar.**, Geetha, B.R., 2018. Heterocyclic modification of chitosan for the adsorption of Cu (II) and Cr (VI) ions. *Separation Science and Technology*, 2018, 53(13), 1979-1990. (IF- 2.45)
- **Chandan Hunsur Ravikumar**, M. Venkataramana, Mahaveer D. Kurkuri and Geetha R. Balakrishna, A simple quantum dot bioprobe / label for sensitive detection of Staphylococcus aureus TNase, *Sensors and Actuators B: Chemical*, 2016, 222, 1201. (IF- 7.5)
- **Chandan Hunsur Ravikumar**, Saravanan V, Ranjith Krishna Pai and Geetha R. Balakrishna, Synergistic Effect of Binary Ligands on Nucleation and Growth /Size of Nanocrystals; Studies on Reusability of the Solvent, *Journal of Material Research*, 2014, 29, 1556. (IF-3.08)
- **Chandan Hunsur Ravikumar** and Geetha R. Balakrishna, Study of precipitation efficiency of solvents in post preparative treatment of nanocrystals, *Journal of Material Research*, 2013, 28, 3003. (IF-3.08)
- Laveena P. D'Souza, Vipin Amoli, **Chandan Hunsur Ravikumar**, Anil Kumar Sinha, Ranjith Krishna Pai and Geetha R. Balakrishna, Atomic Force Microscopy study of nanoscale interaction between N719 dye and CdSe quantum dot for enhanced open circuit potential in a hybrid solar cell, *Solar Energy*, 2015, 116, 25. (IF- 5.7)
- Laveena P D'Souza, Murali Krishan, **Chandan Hunsur Ravikumar**, Ramakrishnappa T and Geetha R Balakrishna, Neodymium modified titania in quantum dot solar cell and grapheme oxide- CuS composite as counter electrode material, a multi approach for enhanced Voc, *Journal of Material research*, 2015, 30, 3241. (IF-3.08)
- B.J. Rajesha, **H.R. Chandan**, K. Sunil, Mahesh Padaki* and Geetha R. Balakrishna, Removal of BP-3 Endocrine Disrupting Chemical (EDC) using cellulose acetate and ZnO nano particles mixed matrix membranes, *Membrane Water Treatment*, 2017, 7, 507-520. (IF- 1.167)

- Othbert pinto, **Chandan. H. R***, Nayimulla Sharif, Suresh RN and Naveen S., Invitro free radical scavenging activity of Loranthus elasticus, *Journal of Harmonized Research in Pharmacy*, 2013, 2, 24. **(IF-2.64)**
- Fluorescent probes for metal ion sensing: mechanism and their applications, Chandan H R, Werasak Surareungchai, R. Geetha Balarkrishna, Under preparation
- Simultaneous detection of dual metal ion using paper based microfluidic device, Chandan H R, Werasak Surareungchai, Under preparation
- Disposable paper based pH sensor for urine and sweat monitoring using IOT, Chandan H R, Pongnat Kruasii, Werasak Sureungchai, Under preparation
- Disposable paper based pH sensor for urine and sweat monitoring using IOT, Chandan H R, Pongnat Kruasii, Werasak Sureungchai, Under preparation

Book Chapter

- M. Sakar, **H. R. Chandan**, R. Shwetharani, Graphene-Paper Based Electrochemical Sensors for Biomolecules, in “Graphene-Based Electrochemical Sensors for Biomolecules”, Elsevier, 2018. ISBN: 9780128153949
- Shwetharani R, **Chandan H R**, Jyothi MS, Quantum dots for Solar Cell applications, Elsevier publications, 2021, (accepted in press)
- **Chandan H R**, Poskorn M, Werasak Surareungchai Future perspective of nano biomaterials in human health care, 2021, Springer, (accepted in press)
- **Chandan H R et al.**, Nano Materials for organophosphate sensing: present and future perceptive, 2021, Elsevier (under revision)

Products/ Patents

1. Wearable Sensing and Device Diaper for Elderly and Bedridden, Chandan H R, Pongnat Kruasii, Werasak Surareungchai (Submitted to the University Patent office)
2. Paper based disposable pH sensor for continuous urine monitoring using IOT, Chandan H R, Pongnat Kruasii, Werasak Surareungchai (Submitted to the University patent office)

Presentation/ conference/ symposium

- **Chandan H R***, Manjunath Ira Gowda, Vishnu Nair G, and R Geetha Balakrishna*, “Quantum dot-graphene oxide FRET probe for detection of micrococcal nuclease”, at International conference of nanostructured materials and nanocomposites-2017, 10th- 12th Feb 2017, IIUCNN, Mahatma Gandhi University, Kottayam, Kerala

- Vishaka V Halali, **Chandan H R*** and R Geetha Balakrishna*, “A Rhodamine 6G based Chemosensor for Sensitive and Selective detection of Cu(II) ions” at International Symposium on New Trends in Applied Chemistry, 9th - 12th Feb 2017, Sacred Heart College, Thevara, Cochin (Received Best Presentation award)
- **Chandan H. R**, Venkataramana. M and Geetha R Balakrishna, “Detection of *S. aureus* TNase using monoclonal antibody conjugated quantum dots”, FINSTA-14, Dec- 20-22, 2014, SSHIL- Prashanthinilayam, Puttaparti, Andhra Pradesh, India.
- **Chandan H R**, Sneha Shenoy, Subbarao Raikar, Geetha R Balakrishna “synthesis and characterization of CdSe/CdS quantum dots in an reusable alkane as solvent”, IUMRS- ICA, Dec-5-6, 2013, Indian Institute of Science, Bangalore, Karnataka.
- **Chandan H R** and Geetha R Balakrishna, International conference on green technology, July 26 -27, 2013, SASTRA University, Thanjavur, Tamilnadu.
- **Chandan H R** and Geetha R Balakrishna, International Conference on International Conference on Recent Advances in Material Science and Technology, Jan 17-19, 2012, NITK, Suratkal, Karnataka.
- **Chandan H R**, YVS Rao and Geetha R Balakrishna, ‘Bangalore Nano’, Synthesis and characterization of CdSe Quantum Dots extracted in various solvents for different End application, Dec 5-7, 2012, Bangalore, Karnataka.
- **Chandan H R** and Othbert Pinto, Recent trends in chemistry, Sep 16-17, 2011, PES College, Mandya, Karnataka.
- **Chandan H R** and Othbert Pinto, Challenges in drug discovery, Feb 16-17, 2011, KSOU, Mysore, Karnataka.

Invited talk in training/symposium/ conference:

- “Nanobiosensors from lab to body” talk delivered at Advances in control systems and sensors, FDP programme organized by IIIT Pune, sponsored by AICTE and ATAL on 27-11-2021
- Modern and Innovative approach to teach chemistry, FDP conducted by Collins International Publishers on 23rd and 24th, May 2022.

Instruments Handled:

- Optical spectroscopy instruments like UV- Visible Spectrophotometer, Spectrofluorophotometer, time resolved photoluminescence (TRPL) and Plate chameleon.
- Epi-fluorescent microscope and fluorescence microscope (life technologies) for bioimaging
- Materials characterization using BET surface area analyser, Bruker ATR IR, Bruker 3 Dimensional Ikon AFM, Newport solar simulator with IQE, Field emission scanning electron microscope (FESEM) (Joel), X-ray photonelectron spectroscopy (XPS) and X-ray diffractometer (Rigaku).
- Electrochemical work station (techniques used Linear sweep voltammetry, cyclic voltammetry, cyclic voltammetry, and impedance studies)
- Citation Plate reader, includes spectrofluorophotometer and absorbance spectra with fluorescence imaging

Achievements:

- Top for the class of the M.Sc.- batch 2010
- Joined as the faculty of St. Philomena's PG centre, Mysuru.
- Finished minor research project "Isolation and characterization of pharmacologically active compound from *Loranthus elasticus*" as co-investigator funded by University Grant Commission
- Joined as Junior Research Fellow at Centre for Nano and Material Sciences, Jain University, under the supervision of Dr. Geetha R. Balakrishna.
- Visiting Fellow, Immunology Lab, DRDO Centre for Life Sciences, Coimbatore, Tamil Nadu, India.
- Joined as Senior Research Associate at CNMS, Jain University.
- Development field deployable device for real time pathogen sensing.
- Postdoctoral fellowship, Sensors Technology Laboratory, King Mongkut's University of Technology Thonburi, Bangkok Thailand

Research interest:

- Hands on experience in synthesis and characterization of quantum dots and metal oxides, have keen interest to explore other fields of chemistry.
- Synthesis perovskite quantum dots with and without Pb.
- Synthesis of core shell type perovskite quantum dots.
- Electrochemical biosensing

- Synthesizing tailored materials for the solar cell and bio-sensing applications.
- Involved in QD- GO based sensor (device) development.
- Developing glass based device for sensitive and selective sensing of pathogens.
- Developing strip based colorimetric sensors for detection of copper and other heavy metal ions for real time sensing applications.
- Development of IoT based wearable sensor using AI and chemical interface
- To develop AI based wearable sensor for monitoring UTI in Alzheimer patients

Personal Data:

Name	:	Dr. Chandan Hunsur Ravikumar. (Dr. Chandan H. R)
Father's name	:	Mr. Ravi Kumar H.S.
Address (Residential)	:	#3603, Inchara, K.R. Nagar Road, Ranganatha Badavane (Extension), Hunsur, Mysuru Dist- 571105
Gender	:	Male
Date of birth	:	8 th April 1987
Languages known	:	Kannada, English and Hindi
Nationality	:	Indian
Marital status	:	Married

This is to confirm and declare that above mentioned details are correct to my knowledge.

Dr. Chandan Hunsur Ravikumar