

Dr. Samrat Devaramani, M.Sc., Ph.D.

Assistant Professor

Department of Chemistry

RV Institute of technology and Management,

J.P.Nagar, Bengaluru – 560076, India

E-mail: samchem83@gmail.com

Mobile Number: +91 9591777195

Scopus ID: 55217911700

ORCID ID: <https://orcid.org/0000-0002-6545-1430>



Education

Bangalore University, Karnataka, India PhD, Thesis Title: Methods for the quantification of hydrogen sulfide/sulfide and sulfite at trace level	Bangalore India 2014
Gulbarga University, Karnataka, India M.Sc., Chemistry	Gulbarga India 2006
Gulbarga University, Karnataka, India B.Sc., Chemistry	Gulbarga India 2004

Funded Projects: 03

Title: Tailoring of multi-response sensors for environmentally/biologically significant species Fund: ₹1.5 lakhs sanctioned for 1 year Agency: TEQIP, VTU, Role: Principal Investigator	Completed
Title: Printing & drawing free, reusable three electrode platforms to circumvent the fabrication of hydrophobic zone & electrodes onto the papers: Reagentless paper based electrochemical sensors for point of care diagnostics and field analysis Fund: ₹ 1371850 sanctioned for 2 years Agency: SRG, SERB, Role: Principal Investigator	Completed
Title: Printing and drawing free fabrication of Paper based analytical devices modified with organic reagents and/or nanomaterials: Dual response (optical and electrochemical) test strips for the quantification of heavy metal ions/Fluoride/pesticide on the spot Fund: ₹8 lakhs sanctioned for 2 years Agency: RGS, VTU, Role: Principal Investigator	Sanctioned

VTU – Visvesvaraya Technological University, Karnataka, India

SERB – Science and Engineering Research Board, Department of Science & Technology, India

Fellowships: 02

Senior Research Fellowship from Council of Scientific and Industrial Research (CSIR), New Delhi, India	India April, 2011- Sept., 2012
Visiting Fellow 2020 – 2021, Host: Prof. C.N. R. Rao	JNCASR, India

JNCASR-Jawaharlal Nehru Centre for Advanced Scientific Research

PhD Supervision: 01

Ms. Rashmi. M	Thesis Submitted (Full time, VTU)
---------------	--------------------------------------

Patents: 02

Method for modifying electrodes and fabricating analytical device on arbitrary substrate and apparatus thereof (202341042329 A)	Published IP India
A reusable three-electrode apparatus and a method of fabricating the reusable three-electrode apparatus (202441039515 A)	Published IP India

Book Chapters: 05

Title: Electrochemical investigation of porphyrin and its derivatives at various interfaces (DOI: 10.5772/67637) XiaoQuan Lu, Samrat Devaramani Book: Phthalocyanines and some current applications (ISBN 978-953-51-3256-1)	IntechOpen, Published
Title: Electrochemical and Optical Methods for the Quantification of Lead and Other Heavy Metal Ions in Liquid Samples (DOI:10.5772/intechopen.95085) Samrat Devaramani, Banuprakash G., Doreswamy B.H. and Jayadev Book: Heavy Metals - Their Environmental Impacts and Mitigation	IntechOpen, Published
Title: Trending Approaches in Electrochemical Sensing Samrat Devaramani et.al. Book: Electrochemistry, Volume 16	RSC, Published
Title: Sensing Applications of 2D Materials Samrat Devaramani et.al. Book: Electrochemistry, Volume 16	RSC, Published
Title: Different covalent functionalization strategies of carbon substrates and their applications Samrat Devaramani et.al. Book: Electrochemistry, Volume 16	RSC, Published

Research interest

- Paper based Electrochemical Sensors (PES): Fabrication and analytical method development
- Electrochemical sensing, Modification & Electroanalysis of materials
- Photoinduced Charge transfer kinetics at solid –liquid interface using SECM

Research experience: 19 years

RV Institute of Technology and Management Assistant Professor • Electrochemical sensors for point of care diagnostics	India July, 2019 – Till date
Dayanda Sagar College of Engineering Assistant Professor • Anode materials for lithium ion battery	India August, 2017- June, 2019
Northwest Normal University, Lanzhou Postdoctoral fellow; Advisor: Prof. Xiaoquan Lu Topic(s); • Investigation of photoinduced charge transfer kinetics of porphyrin and its derivatives at solid – liquid interface using scanning electrochemical microscope (SECM).	China July, 2015- June, 2017
Center for Nano and Materials Sciences, Jain University, Bangalore Topic(s); Postdoctoral fellow; Advisor: Dr. T. Ramakrishnappa • Electrochemical sensors and electrochemical functionalization	India Oct., 2012- June, 2015
Bangalore University, Bangalore PhD, Research scholar; Advisor: Prof. M. Pandurangappa Topic(s); • Developing colorimetric & electrochemical methods for the quantification for sulfur compounds • Functionalization of carbon substrates for the determination of sulfite in food and water samples	India Jan., 2007- Sept., 2012

Teaching Experience: 12

Jain University, Bangalore Senior Lecturer Taught; Master of Science (M.Sc.), Physical Chemistry	May 2014- June 2015
Northwest Normal University, Lanzhou Taught; Master of Science (M.Sc.), Electroanalysis	July 2015- June 2017
Dayanda Sagar College of Engineering Assistant Professor Taught; Engineering Chemistry	Aug. 2017- June 2019
RV Institute of technology and Management Assistant Professor Taught; Engineering Chemistry	July 2019 - Present

Peer-Reviewed Publications: 30

- 1) Rashmi M, **Samrat Devaramani***, Pristine paper-based device for non-enzymatic electrochemical detection of creatinine: sensitization via electrode and paper modification strategies, *Analytical and Bioanalytical Chemistry*, 2026 ((**I.F = 3.8**))
- 2) Rashmi M, **Samrat Devaramani***, Scotch tape method like modification of electrode stickers: Bismuth-modified copper-based paper device for simultaneous electrochemical detection of Pb(II) and Cd(II), *Talanta Open*, 11, 2025, 100442 (**I.F = 4.2**)
- 3) Rashmi M, **Samrat Devaramani***, Xiaofang Ma, Saju Pillai, Ahipa T. N., Prasad B. E., Sureshkumar, Electrochemical sensing of Cr(VI): Leveraging the copper electrode by copper chromium interaction, *Journal of Solid State Electrochemistry*, 14 March 2025 (**I.F = 2.6**)
- 4) M Rashmi, **S Devaramani***, X Ma, A simple approach for on-site fabrication of copper-based paper device: Disposable electrochemical sensor for the estimation of lead, *Microchemical Journal* 208, 112456 (**I.F = 4.9**)
- 5) K Manjunath, A Saraswat, **D Samrat**, CNR Rao, Atomic Layer Deposited Ti₂O₃ Thin Films, *ChemPhysChem*, 23, 2022, e202100910(**I.F = 3.1**).
- 6) Varsha RajGovindaraju, KempahanumakkagariSureshkumar, ThippeswamyRamakrishnappa, Sreeramareddygarimuralikrishna, **Devaramani Samrat**, RanjithKrishna Pai, VanishKumar, KumarVikrant, Ki-HyunKim, Graphitic carbon nitride composites as electro catalysts: Applications in energy conversion/storage and sensing system, **Journal of Cleaner Production**, 320, 2021, 128693 - 128645 (**I.F = 9.2**).
- 7) KempahanumakkagariSureshkumar, ThippeswamyRamakrishnappa, **Devarmani Samrat**, “Piperazine appended naphthalimide scaffold as turn on fluorescent probe for hydrogen sulfide”, *Microchemical Journal*, 2020, 157, 105019 – 105037(**I.F =3.2**).

- 8) **Samrat Devaramani**, Xiaofang Ma, Shouting Zhang, Mahgoub Ibrahim Shinger, Dongdong Qin, Duoliang Shan, Xiaoquan Lu, Photo-Switchable and Wavelength Selective Axial Ligation of Thiol Appended Molecules to Zinc Tetraphenylporphyrin: Spectral and Charge Transfer Kinetics Studies, **Journal of Physical Chemistry C**, 2017, 121, 9729–9738(**I.F = 4.4**).
- 9) **Samrat Devaramani**, Mahgoub Ibrahim Shinger, Xiaofang Ma, Shouting Zhang, Dongdong Qin, Duoliang Shan, Xiaoquan Lu, Porphyrin Cofacial, Coherent Aggregates Decorated MWCNT Film for Solar Light Harvesting: Influence of J- and H- Aggregation on the Charge recombination resistance, Photocatalysis, and Photoinduced Charge Transfer Kinetics, **Physical Chemistry Chemical Physics**, 2017,19, 18232-18242(**I.F = 4.4**).
- 10) **Samrat Devaramani**, PandurangappaMalingappa, Covalent anchoring of cobalt hexacyanoferrate particles on graphitic carbon: A simple and renewable robust pellet electrode as an electrochemical interface for amperometric quantification of sulfite, **ElectrochimicaActa**, 2017, 231, 650 – 658 (**I.F = 7.3**)
- 11) **Samrat Devaramani**, MuralikrishnaShriramareddygar, M. RadhakrishnaReddyThippeswamyRamakrishnappa, Covalently anchored p-aminobenzene sulfonate multilayer on a graphite pencil lead electrode: A Highly selective electrochemical sensor for dopamine, **Electroanalysis**, 2017, 29, 1410-1417 (**I.F = 3.0**)
- 12) **Samrat Devaramani**, PandurangappaMalingappa, Synthesis and Characterization of cobalt nitroprusside nano particles: Application to sulfite sensing in food and water samples, **ElectrochimicaActa**, 2012, 85, 579-587 (**I.F. = 7.3**).
- 13) LingxiaJi, **Samrat Devaramani**, Xiang Mao, Zhen Zhang, DongdongQin,Duoliang Shan, Shouting Zhang, Xiaoquan Lu, Behaviors of the Interfacial Consecutive Multistep

Electron Transfer Controlled by Varied Transition Metal Ions in Porphyrin Cores, **J. Phys. Chem. B**, 2017, 121, 9045–9051 (**I.F.** = **3.5**)

14) N. G. puttaiah, **S. Devaramani** C. T. Gujjarahalli, α -MoO₃ nanoparticles: Solution combustion synthesis, photocatalytic and electrochemical properties, **RSC Advances**, 2014, 4, 56784-56790 (**I.F.** = **4.0**).

15) Jing Zhang, **Samrat Devaramani**, Duoliang Shan, Xiaoquan Lu, Electrochemiluminescence behavior of meso-tetra (4-sulfonatophenyl)porphyrin in aqueous medium: its application for highly selective sensing of nanomolar Cu²⁺, **Analytical and Bioanalytical Chemistry**, 2016, 408, 7155 - 7163 (**I.F.** = **4.3**).

16) Xiaoyuyan, **Samrat Devaramani**, Dongdong Qin, Jing Chen, Duoliang Shan and Qin Ma, Xiao-Quan Lu, Self-supported rectangular CoPNanosheet arrays Grown on Carbon Cloth as an Efficient Electrocatalyst for Hydrogen Evolution Reaction Over a variety of pH values, **New Journal of Chemistry**, 2017, 41, 2436 - 2442 (**I.F.** = **3.9**).

17) Huan Wang, Guiqiang Pu, **Samrat Devaramani**, Yanfeng Wang, Zhaofan Yang, Linfang Li, Xiaofang Ma, and Xiaoquan Lu, Bimodal Electrochemiluminescence of G-CNQDs in the Presence of Double Coreactants for Ascorbic Acid Detection, **Analytical Chemistry**, 2018, 90, 4871–4877 (**I.F.** = **8.0**)

18) Xingming Ning, Wenqi Li, Yao Meng, Dongdong Qin, Jing Chen, Xiang Mao, ZhonghuaXue, Duoliang Shan, **Samrat Devaramani**, Xiaoquan Lu, New Insight into Procedure of Interface Electron Transfer through Cascade System with Enhanced Photocatalytic Activity, **Small**, 2018, 14, 1703989 (**I.F.** = **15.15**)

19) XiaofangMa, JingChen, YaliWu, **Samrat Devaramani**, XiaoyanHu, QixiaNiu, CaizhongZhang, DuoliangShan, HuanWang, XiaoquanLu, π - π nanoassembly of water-soluble

metalloporphyrin of ZnTCPP on RGO/AuNPs/CS nanocomposites for photoelectrochemical sensing of hydroquinone, **Journal of Electroanalytical Chemistry**, 820, 2018, 123-131 (**I.F. = 4.6**)

20) Samrat Devaramani, RamakrishnappaThippeswamy, Nathan S Lawrence, Size reduced iron nitroprusside particles: An electrochemical mediator for the determination of peroxodisulfate and nitrite,**Journal of Brazilian Chemical Society**, 2015, 26, 521-530 (**I.F. = 1.5**)

21) S. Muralikrishna, K. Manjunath, **D. Samrat**, Viswanath Reddy, T. Ramakrishnappa, D. H. Nagaraju, Hydrothermal synthesis of 2D MoS₂nanosheets for electrocatalytic hydrogen evolution reaction, **RSC Advances**, 2015, 5, 89389 – 89396 (**I.F. = 4.0**).

22) Xiaofang Ma, Yali Wu, **Samrat Devaramani**, Caizhong Zhang, QixiaNiu, Mahgoub Ibrahim Shinger, Wenqi Li, Duoliang Shan, Xiaoquan Lu, Preparation of GO–COOH/AuNPs/ZnAPTPP Nanocomposites based on the π – π Conjugation: Efficient interface for Low-Potential Photoelectrochemical sensing of 4-nitrophenol, **Talanta**, 2018, 178, 962-969 (**I.F. = 6.6**)

23) Samrat Devaramani, JagadeeshaMalleshappa, SureshkumarKempahanumakkagari, RamakrishnappaThippeswamy, PandurangappaMahalingappagari, Synthesis of Nickel Nitroprusside Coordination Nanoparticles by Simple Means: Its Characterization and Use as Electrochemical Sensor for Sulfide Estimation in Sewage and Water Samples, **International Journal of Electrochemical Science**, 2014, 9,4692 - 4708 (**I.F. = 1.5**)

24) Mahgoub Ibrahim Shinger,Ahmed Mahmoud Idris, **Samrat Devaramani**, Dong Dong Qin, Hind Baballa, Duoliang Shan, Xiaoquan Lu, In situ-ion exchange method fabricated GO-

Ag₃PO₄@AgBr composite with enhanced photocatalytic activity under simulated sunlight, **Journal of Environmental Chemical Engineering**, 2017, 5, 1526-1535 (I.F.=8.0)

25) Xiaoyu Yan, Tao Liu, Jun Jin, **Samrat Devaramani**, Dongdong Qin, Xiaoquan Lu, Well dispersed Pt–Pd bimetallic nanoparticles on functionalized graphene as an excellent electrocatalyst towards electro-oxidation of methanol, **Journal of Electroanalytical Chemistry**, 2016, 770, 33 - 38 (I.F.=2.822)

26) Qiao-Ling Ma, Hong Xia, Shou-Ting Zhang, Dong-Dong Qin, **Samrat Devaramani**, Duo-Liang Shan, Xiao-Quan Lu, Investigation of Proton-Driven Amine Functionalized Tube Array as Ion Responsive Biomimetic Nanochannels, **RSC Advances**, 2016, 6, 12249-12255 (I.F. = 4.0)

27) MalingappaPandurangappa, **Devaramani Samrat**, Micellar-mediated extractive spectrophotometric method for the determination of Hydrogen sulfide/sulfide through Prussian blue reaction: Application to environmental samples. **Analytical Sciences**, 2010, 26, 83-87(I.F. = 2.0)

28) Tao Liu, Xiaoyu Yan, Pinxian Xi, Jing Chen, Dongdong Qin, Duoliang Shan, **SamratDevaramani**, Xiaoquan Lu, NickeleCobalt phosphide nanowires supported on Ni foam as a highly efficient catalyst for electrochemical hydrogen evolution reaction,**International Journal of Hydrogen Energy**, 2017, 42, 14124-14132 (I.F. = 7.13)

29) **Samrat Devaramani**, PandurangappaMalingappa, MicelleMediated Trace Level Sulfide Quantification through Cloud Point Extraction, **The ScientificWorld Journal**, 2012, 1-8

30) PandurangappaMalingappa, **Samrat Devaramani**, Surfactant mediated sulfide estimation at trace level: Application to environmental samples, **Journal of Analytical Chemistry**, 2012, 67, 761-766 (I.F. = 1.1)

31) Xiaofang Ma*, Shunxi Li, **Samrat Devaramani ***,Guohu Zhao and Daqian Xu, “One-Pot, Regioselective Synthesis of Homopropargyl Alcohols using Propargyl Bromide and Carbonyl Compound by the Mg-mediated Reaction under Solvent-free Conditions”, letters in Organic Chemistry, 2020, 17, 438–442 (**I.F = 0.72**).

Papers presented in international conferences/ symposium

1) International Conference on Current Trends in Chemistry and Biochemistry (Poster entitled “Micellar-mediated extractive spectrophotometric method for the determination of Hydrogen sulfide/sulfide through Prussian blue reaction: Application to environmental samples” presented), 18–19 December 2009, Department of Chemistry, Central College, Bangalore University, Bangalore.

2) International Conference on Synthetic and Structural Chemistry (Oral presentation entitled “Micelle-Mediated Trace Level Sulfide Quantification through Cloud Point Extraction”), 8 -10 December, 2011, Department of Chemistry, Mangalore University, Mangalore.

3) 5th Bangalore Nano (Poster entitled “Synthesis and Characterization of cobalt nitroprusside nano particles: Application to sulfite sensing in food and water samples” presented), 5-7 December 2012, The Lalith Ashok, Bangalore.

4) International Conference on recent advances in material science & Technology, Oral presentation on “Synthesis and Characterization of Nickel nitroprusside nano particles Application on to sulfite sensing in food samples”), 17-19th Jan 2013, Chemistry Department, NITK, Surathkal, India.

5) Invited talk on “Semiconductor Quantum Dots: Photochemical Properties and Applications” in The 1st Northwestern International Electrochemistry Symposium, 17-06-2016, Northwest Normal University, Lanzhou, Gansu, China.

- 6) Oral presentation on “Photoinduced charge transfer kinetics of the donor-bridge-acceptor systems” in Chinese Chemical Society 30th Annual Meeting, Dalian, China on 04-07-2016
- 7) Oral presentation on Electrografting of p-Aminobenzene Sulfonate Multilayer on a Graphite Pencil Lead Electrode: A Highly Selective Electrochemical Sensor for Dopamine” in Advances in Materials, Ceramics & Engineering Sciences (AMCES- 2020), Dayananda Sagar College of Engineering, Bengaluru, India on 17th - 18th January, 2020

References

Prof. M. Pandurangappa (Retired) Former Chairman, Department of Chemistry, Central College Campus, Bangalore City University Bangalore – 560001 Email: mpranga@yahoo.com	Dr. Saju Pillai Principal Scientist CSIR - National Institute for Interdisciplinary Science and Technology Thiruvananthapuram, India Email: pillai_saju@niist.res.in
Prof. Ramakrishnappa T HoD, Department of Chemistry, BMS Institute of Technology and Management, Doddaballapur Main Road, Avalahalli Bengaluru, Karnataka, - 560064 Email: hod_chemistry@bmsit.in	