

Curriculum Vitae

Dr. SAMBATHKUMAR SUBRAMANIYAN, M.Sc., M.Phil., Ph.D., PGDCA., MRSC. (U.K.)

Assistant Professor of Chemistry and Research Advisor

INSA Visiting Scientist Fellow (FY 2021 - 2022) at CSIR CECRI, Karaikudi, Tamil Nadu

Vivekanandha College of Arts and Sciences for Women (Autonomous)

(Affiliated to Periyar University and Nationally Reaccredited with 'A' Grade by NAAC)

Elayampalayam, Tiruchengode Taluk, Namakkal 637 205, Tamil Nadu, INDIA



Mobile No.: +91 99941 34304; +91 75300 31324 e-Mail: sambathtacw@gmail.com

Educational Qualifications

July 2011 – October 2016: **Ph.D. in Chemistry** at School of Chemistry, Bharathidasan University, Tiruchirappalli – 620 024, Tamil Nadu, India

Specialization: "Organic Materials Chemistry" - **Commended**

Research Supervisor: **Dr. R. Renganathan**, Professor (Rtd), UGC Emeritus Fellow (2016)

July 2010 – May 2011: **M.Phil. in Chemistry** at School of Chemistry, Bharathidasan University, Tiruchirappalli – 620 024, Tamil Nadu, India with **75.00%, First Class with Distinction – D grade**, Specialization: "Synthetic Organic Chemistry"

Research Supervisor: **Dr. S. Muthusamy**, Professor, Chair and Head; Director Research

July 2008 – April 2010: **M.Sc. in Chemistry** at Post - Graduate and Research Department of Chemistry, Bishop Heber College (Autonomous), Tiruchirappalli - 620 017, Tamil Nadu, India, (Affiliated to Bharathidasan University) with **92.70%, First Class with Distinction**, Specialization: "Electrochemistry"

July 2005 – April 2008: **B.Sc. in Chemistry** at Department of Chemistry, Government Arts College, Karur - 639 005, Tamil Nadu, India, (Affiliated to Bharathidasan University) with **82.08%, First Class with Distinction – D+ grade**

Research Interests (Broad Topic of Research: **Materials Chemistry**)

- Design and Synthesis of **Organic Materials** for **Dye Sensitized Solar Cells** and **Optoelectronics**; **Organic Hole Transporting Materials** for **Perovskite Solar Cells**
- Functionalized **Carbon Nanocomposites** for **Energy Storage and Conversion Applications**; Green Synthesis

1. Interaction of Acriflavine with Pyrimidines: A Spectroscopic Approach, C. Manivannan, **S. Sambathkumar** and R. Renganathan, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, **2013**, *114*, 316-322 (**Impact Factor 4.098**)
2. Synthesis and Photophysical Properties of Triphenylamine based Sensitizers and its Interaction with TiO₂ Nanoparticles, **S. Sambathkumar**, A. Revathi, S. Priyadharshini and R. Renganathan, *Journal of Environmental and Applied Bioresarch*, **2015**,*3(2)*,33-39
3. Design and Synthesis of Phenothiazine based push pull Organic Sensitizers with Benzimidazole as an Auxiliary Donor for DSC's, **S. Sambathkumar**, S. Priyadharshini A. Saritha and R. Renganathan, *MOJ Bioorg. Org. Chem.*, **2018**, *2 (3)*, 134 - 138
4. Metal Free Organic Dyes Derived from Phenothiazine for Dye Sensitized Solar Cells; Tuning of the Performances by Imidazole Derivative, **S. Sambathkumar**, S. Priyadharshini, A. Saritha and R. Renganathan, *MOJ Bioorg. Org. Chem.*, **2018**, *2 (3)*, 128 - 132
5. Design and Synthesis of Imidazole-Triphenylamine based Organic Materials for Dye Sensitized Solar Cells, **S. Sambathkumar**, S. Priyadharshini, M. Fleisch, D. W. Bahnmann, G. Gnana Kumar, R. Renganathan and S. Senthilarasu, *Mater. Lett.*, **2019**, *242*, 28-31 (**Impact Factor 3.423**)
6. Covalent Grafting of N-containing Compound with Graphene Oxide: Efficient Electrode Material for Supercapacitor, P. Ramesh, A. Prabhakaran, A. Shankar, R. Jagatheesan, **S. Sambathkumar**, B. Jebasingh, S. Vasantakumar, *Chem. Sci. Engg. Res.*, **2019**, *1*, 8-15
7. A Facile Synthesis of Hydroxyl Functionalized Graphene Oxide as an Electrode Material for Energy Storage Devices, P. Ramesh, **S. Sambathkumar**, R. Jagatheesan, S. Vasanthakumar, *Mater. Lett.*, **2019**, *256*, 126639 (**Impact Factor 3.423**)
8. Selective α -Bromination of Aryl Compounds: Prospects and Challenges, R. Jagatheesan, P. Ramesh and **S. Sambathkumar**, *Synthetic Communications*, **2019**, *49 (23)*, 3265 – 3289 (**Impact Factor 2.007**)
9. Exclusively explored electrochemical halogenation of aryl compounds; periodical updates: Since 2000, R. Jagatheesan, C. Christopher, P. Ramesh and **S. Sambathkumar**, *Synthetic Communications*, **2020**, *50 (16)*, 2391 – 2412 (**Impact Factor 2.007**)

10. Facile Synthesis of ZnO/AC Nanocomposites using *Prosopis Juliflora* for Enhanced Photocatalytic Degradation of Methylene Blue and Antibacterial Activity, S. Sheik Mydeen, R. Raj Kumar, **S. Sambathkumar**, M. Kottaisamy, V. S. Vasantha, *Optik*, **2020**, *224*, 165426 (**Impact Factor 2.443**)
11. Hierarchical MnS@MoS₂ architectures on tea bag filter paper for flexible, sensitive, and selective non-enzymatic hydrogen peroxide sensors N. Priyanga, A. Sahaya Raja, Mehboobali Pannipara, S. Abdullah G. Al-Sehemi, Siew-Moi Phang, Yang Xia, Shu-Yi Tsai, J. Annaraj, **S. Sambathkumar**, G. Gnana Kumar, *Journal of Alloys and Compounds*, **2021**, *855*, 157103 (**Impact Factor 5.316**)
12. Graphene Quantum Dots/ZnO Nanocomposite: Synthesis, Characterization, Mechanistic Investigations of Photocatalytic and Antibacterial activities, S. Sheik Mydeen, R. Raj Kumar, R. Sivakumar, **S. Sambathkumar**, M. Kottaisamy, V. S. Vasantha, *Chemical Physics Letters*, **2020**, *761*, 138009 (**Impact Factor 2.328**)
13. Spectroscopic and DFT Calculation Studies on Photoinduced Interaction of Nile Blue with Uracils, **S. Sambathkumar**, C. Manivannan, Sambath Baskaran, R. Raj Kumar, V. Anbazhagan, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, **2021**, *246*, 119011 (**Impact Factor 4.098**)
14. Dual Probes of Ag/Pd bimetallic NPs Facilely Synthesized by Green Process using *catharanthus* Leaf Extract on Textile Dye Removal and Free Radical Capability, S. Mohan, M. Vishnu Devan, **S. Sambathkumar**, V. Shanmugam, K. Ravikumar, R. Marnadu, B. Palanivel, H. H. Hegazy, *Appl. Nanosci.*, **2021**, *11*, 1565 (**Impact Factor 3.674**)
15. Theoretical Investigations on the Electronic Absorption Properties of Phenothiazine Based Organic Materials for Dye Sensitized Solar Cells, **S. Sambathkumar**, Dawid Zych, E. Kavitha, P Ramesh, R. Jagatheesan, *Mater. Today Proceed.*, **2021**, <https://doi.org/10.1016/j.matpr.2021.03.715> (**Impact Score 1.24**)
16. An Expedition and Efficient Method for the Oxidation of Benzyl Alcohols by Homogeneous Electrolysis, R. Jagatheesan, P. Shanmugavelan, **S. Sambathkumar**, P. Ramesh, *Synthetic Communications*, **2021**, <https://doi.org/10.1080/00397911.2021.1960377> (**Impact Factor 2.007**)
17. Carbazole based Hole Transporting Materials for Efficient Perovskite Solar Cells: Insights from Design Strategies, **S. Sambathkumar**, R. Jagatheesan, P. Ramesh (to be submitted in *Synthetic Communications*)

Book Chapters (in an Edited Book)

1. **S. Sambathkumar**, Rajesh Haldhar, Seong-Cheol Kim, *Lipids and Fatty Acids, Handbook of Biomolecules*, Elsevier Publications (Revision is being processed)

2. **S. Sambathkumar**, Organic Hole Transporting Materials for Perovskite Solar Cells: Progress and Prospects, Photovoltaics Beyond Silicon, Elsevier Publications (Under Editors' Review) ; ISBN 604256

Research and Academic Experiences (incl. of Awards, Fellowships and Recognitions)

- **Ph.D. Thesis:** Design and Synthesis of Triphenylamine and Phenothiazine Based Organic Molecules with an Additional Donor for **Dye Sensitized Solar Cells** under the supervision of **Dr. R. Renganathan**, Professor (Rtd.), Former Emeritus Fellow (UGC), School of Chemistry, Bharathidasan University, Tiruchirappalli
- **DST - Major Research Project:** Selected as a **Project Assistant**, in DST Major Research Project, entitled, "Photoinduced Reactions between Nanosized Quantum Dots of CdTe and Porphyrins / Metallo – Porphyrins" Offered by Department of Science and Technology (DST), Nano Mission, Government of India under the supervision of **Dr. R. Renganathan**, Professor (Rtd.), Former Emeritus Fellow (UGC), School of Chemistry, Bharathidasan University, Tiruchirappalli (06 Months, Total cost **Rs. 22.00 Lakhs**)
- **M.Phil. Dissertation:** Studies towards the Synthesis of Bis-Diazoester and Bis-Olefin Derivatives under the supervision of **Dr. S. Muthusamy**, Professor, Chair and Head, School of Chemistry, Director-Research, Bharathidasan University
- **M.Sc. Dissertation:** Alkaline Aluminium Dichromate Battery Using EDTA, Oxine and Salicylic acid as Anolytes under the guidance of **Dr. T. Jeyaraj**, Associate Professor and Research Adviser (Rtd.), Post - Graduate and Research Department of Chemistry, Bishop Heber College (Autonomous), Tiruchirappalli, Tamil Nadu
- **Junior Research Fellow (JRF):** Awarded under Research Fellowship in Science for Meritorious Students (RFSMS), Sponsored by Basic Scientific Research (BSR), University Grants Commission (**UGC**), Government of India (JRF **02** years)
- **Senior Research Fellow (SRF):** Awarded under Research Fellowship in Science for Meritorious Students (RFSMS), Sponsored by Basic Scientific Research (BSR), University Grants Commission (**UGC**), Government of India (SRF **02** years)
- **International Travel Support** under **Young Scientist Category** from Science and Engineering Research Board (**SERB**), Department of Science and Technology (**DST**), Ministry of Science and Technology, Government of India (**Rs. 98,411/-**)
- **Principal Coordinator** in **DST FIST level "0" College as Whole** Scheme, Research and Development Infrastructure Division, formerly Fund for Improvement of S&T Infrastructure (**FIST**), Department of Science and Technology (**DST**), Ministry of Science and Technology, Government of India (**Rs. 45.00 Lakhs**)

- Awarded **Student Project Scheme 2017 – 2018** (Code: **PS-018**) from Tamil Nadu State Council for Science and Technology (**TNSCST**), Government of Tamil Nadu (**Rs. 10,000/-**)
- **Fellowship Award** (e-WISPOC) from Organic Chemistry Division, School of Chemical Sciences, **University of Padova**, Italy, **Italian Chemical Society** and **EuCheMS (320 EURO)**; Selected for **Flash Presentation** (Oral)
- Awarded **INSA Visiting Scientist Fellowship Programme (FY 2021 - 2022)** to visit Electro Organic and Materials Electrochemistry Division, **CSIR Central Electrochemical Research Institute (CSIR CECRI)**, Karaikudi, Tamil Nadu under the guidance of **Dr. A. Pandikumar**, Scientist, CSIR CECRI, Karaikudi (02 Months)
- Received **SERB Qualified Unique Identification Document (SQUID) No.:** SQUID-1988-SS-0066
- Recognized **Research Supervisor**, Periyar University, Salem (M.Phil./Ph.D.)
- Experienced in handling **Sophisticated Analytical Instruments** (high end models) and Technical Writing, Review and Editing of Manuscripts
- Member, **Royal Society of Chemistry (MRSC)**, Cambridge, United Kingdom
- Life Member, **Society of Environmental Chemistry and Allied Sciences (SECAS)**, Mahatma Gandhi University, Kottayam, Kerala, India
- **Outstanding Reviewer Award** from **Materials Letters, Elsevier** (7+ assignments)
- **Reviewer** for **Journal of Molecular Structure, Journal of Alloys and Compounds** and **Materials Today: Proceedings, Elsevier**
- **Reviewer** for Synthetic Communications, **Taylor and Francis**
- **Reviewer** for Scientific Reports, **Springer Nature**
- **Brand Ambassador** (of India), **Bentham Science Publishers**, UAE
- **Teaching Experiences** (UG and PG levels, as on 15.07.2021, **5 years 7 Months**)
Head of the Department/Chemistry: 07th July, 2017 – 05st June, 2018 at Theivanai Ammal College for Women (Autonomous), Villupuram, Tamil Nadu
Assistant Professor of Chemistry and Extension Coordinator: 16th June 2016 – 01st April, 2019 at Theivanai Ammal College for Women (Autonomous), Villupuram, Tamil Nadu, India (**03 Years**)
Assistant Professor of Chemistry: 29th May, 2019 – **till date** at Vivekanandha College of Arts and Sciences for Women (Autonomous), Namakkal, Tamil Nadu
- **Chairman**, Chemistry Session, **Academic Council** (Meeting XI and X) and **Board of Studies** (Meeting X) at Theivanai Ammal College for Women
- **External Additional Chief Superintendent of Examinations**, University Examinations November – December 2018 under Thiruvalluvar University*
- **Examiner** for **Question Paper Setting (Chemistry)** at G.T.N. Arts College (A), Dindigul and Meenakshi College for Women (A), Chennai
- Served as a **Coordinator** for **Question Paper Proof Reading** for End Semester Examinations April, 2017 held at Theivanai Ammal College for Women (A)

- **Young Visiting Scientist** and Collaborator, **RINZTECH NZ PVT LTD**, New Zealand
- **Scientific Analyst – Trainee** at Molecular Connections Private Limited, Bangalore
- **Editorial Board Member**, Journal of Energy, Environmental and Chemical Engineering ISSN: 2637 4331 (Print); ISSN: 2637 434X (On-line)
- **Reviewer**, Book Chapters, Nova Publishers, United States of America
- Worked as a **Practical Demonstrator cum Teaching Assistant**, Physical Chemistry Practicals, School of Chemistry, **Bharathidasan University**, Tiruchirappalli (06 Months)
- Awarded **Merit Certificate (PG Level)** for Curricular, Co-Curricular and Extra-Curricular Activities from Bishop Heber College (Autonomous), Tiruchirappalli
- **Convener** in **National Workshop** on Biochemical Techniques for Greening of Research organized by Dept. of Chemistry, Theivanai Ammal College for Women
- **Program Coordinator**, Hands-on Training on “Cost Effective Spectroscopic Techniques” Jointly organized by IQAC, CMRD and Department of Chemistry; **Convener** in **International Virtual Conference** on RACS 2020, organized by Department Chemistry, Vivekanandha College of Arts and Sciences for Women
- **Resource Person** in **TNSCST, Govt. of Tamil Nadu** sponsored **In-Service Training to Secondary Grade Teachers** at Theivanai Ammal College for Women (A)
- **Technical Expert**, Online **STPIC 2020** and **Chaired a Session**, Online **STPIC 2021**, Organized by The **Academy of Sciences, Chennai** and University of Madras, Chennai and Madurai Kamaraj University, Madurai
- Participated in the **4th Science Conclave: A Congregation of Nobel Laureates and Eminent Scientists** hosted by Indian Institute of Information Technology, Allahabad, Utter Pradesh (Supported by MHRD & DST)
- Selected for **Summer Training Program in Chemistry (STPIC 09)** Sponsored by Department of Inorganic Chemistry, School of Chemical Sciences, **University of Madras**, Chennai, **Department of Higher Education**, Govt. of Tamil Nadu
- Selected and Participated in regional workshop on “**Research Based Pedagogical Tools**” organized by **IISER, Pune** supported by SRM University, Chennai
- **Professional Roles and Responsibilities** as : **Member** in **College Development Council**, IQAC, R & D, ISO audit, NIRF; **Faculty Selection Committee**, **Coordinator** for **R&D, NAAC**, M.Phil./Ph.D.; **Chairman** PG Board valuation, NPTEL Mentor
- Served as **NSS Volunteer** in School and College levels with **NSS “A” Certificate**
- Elected and Served as a **Joint Secretary** of **Bishop Heber Alumni Association (BHAA)** for Tiruchirappalli Chapter and **Secretary of Chemistry Association (2009-2010)** of Post - Graduate and Research Department of Chemistry, Bishop Heber College (Autonomous), Tiruchirappalli
- Elected and Served as a **General Advisor**, Porunai and Vaigai Research Scholars’ Hostels, Bharathidasan University, Tiruchirappalli

Computer Knowledge and Experiences

- **Post Graduate Diploma in Computer Applications** (PGDCA) with First Class Distinction from Best & Best Computer Training Center (Govt. Approved), Karur
- **Computer Literacy Program** (Studied in Under - Graduation) offered by Department of Collegiate Education, Government of Tamil Nadu
- Handling of **Software Packages** like, ChemDraw, Origin, Chems sketch, Endnote and Molinspiration Cheminformatics and Interested in **Web Designing, MOOCs, FOSS** and **SWAYAM** (especially NPTEL and Spoken Tutorial); **Online T & L Practices**

Personal Profile

Father's Name : Mr. R. Subramaniyan
Gender : Male
Marital Status : Married
Date of Birth : 25th May, 1988
Nationality : Indian
Religion and Caste : Hindu, OBC
Languages Known : Tamil and English
Countries Visited : **Italy (Bressanone)**
Hobbies : Reading Books, Listening Music and Playing Chess
Strengths : Sincerity, positive attitude, adaptability to work in any environment

Residential Address : 226/10, Ganesh Nagar, Veerarakkiyam (Post),
Krishnarayapuram (Taluk), Karur (District) 639 114, Tamil Nadu, INDIA

Professional References

Dr. R. RAMESH, FRSC, FASCh

Professor and Coordinator, COMC
Former Chair and Head
School of Chemistry
Bharathidasan University
Tiruchirappalli 620 024
Tamil Nadu, India
E-Mail: ramesh_bdu@yahoo.com
Mobile No.: +91- 94860 66934

Dr. G. GNANA KUMAR, FASCh

Assistant Professor and Head I/C
Department of Physical Chemistry
School of Chemistry
Madurai Kamaraj University
Madurai 625 021
Tamil Nadu, India
E-Mail: kumarg2006@gmail.com
Mobile No.: +91- 95857 52997