CURRICULUM VITAE

Dr. SANTHOSH @ BABU K (Ph.D. in Chemistry)
!79, Ull Street, Virudhunagar, India-626001
Mobile: +91-9843235430
E-mail: ksbabu91@gmail.com, chemistsanthosh@gmail.com
ORCID : https://orcid.org/0000-0001-5894-7916

Objective

Seeking for a good position to build strong knowledge and learning opportunities in a progressive and competitive work culture in the frontier area of research with Organic /Inorganic / Hybrid materials for energy conversion and storage applications.

Education:

1. **PhD in Chemistry** April 2022, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India.

Thesis: *Synthesis of Organic Molecules and Their Application in Dye-Sensitized Solar Cell for Conversion of Solar Energy into Electricity*

2. **M.Sc. in Chemistry** in 2014 (7.3 GPA), V.H.N.S.N. College. (A), Virudhunagar, Madurai Kamaraj University, Tamil Nadu, India.

Thesis: *Metal Halide Salts of Protonated Morpholine: Synthesis, Crystal Structure, Molecular Characterisation, DFT & Td-DFT Calculation.*

3. **B.Sc. in Chemistry** in 2012 (7.08 GPA) (Ancillary: Physics & Mathematics), V.H.N.S.N. College, Virudhunagar, Madurai Kamaraj University, Tamil Nadu, India.

Reseach Interest

- Organic synthesis, Electrochemistry.Device Fabrication
- Organic Electroactive Materials, Organic Additive, Redox couple. Polymer based electrolyte. Carbon-based -Cathode materials
- Dye–sensitizer solar cells, Organic Photovolatic cell, Super-capacitor, Flexible Device.

Research Expertise

- Performed team and independent research on organic chemistry, electrochemistry for energy conversion and storage systems.
- Design, Engineering, Syntheis of Small / Macromolecular organic materials for energy conversion and storage systems.
- Suitable Organic /Inrganic Metal complex materials as Redox couple
- Capable to develop polymer-based hosts for electrolytes.
- Carbon based electrode materials fabrication from bio-waste for flexible Energy Storage Applications.

Project Work Assistance

- I strongly support **Two project students** for completing the M.Sc project in Chemistry.

Skills

- Well experienced in Design and synthesis of Organic /Inorganic materials
- Experience in Instrument handling experience on
  - **UV, FT-IR, NMR, GC, CV, LSV, EIS, DSC, TGA, XRD**
  - Chromatographic Techniques **: TLC, CC, GC**
- Working knowledge of software's: MS office, Chemdraw, Scifinder, Origin.

Working Experience

- Worked as **Project Assistant –III,** CECRI-Karaikudi (03/2016 to 08/2017)
- Worked as **Lecturer** in Chemistry, V.S.V.N.Polytechnic College, Virudhunagar. (06/2015 to 02/2016)
- Worked as **Lab Chemist. (apprentices)** The Pandian chemicals limited, Cuddalore. (09/2014 to 05/2015)

Achievement

- Published : **10** SCI Journals, Total Citations : **66**, Average IF : **>5,** H-Index-**4**
- Secured Second price as **Best Oral Presentation** in ETADS-2022 organized by Madurai Kamaraj University.

Publication

1) **Santhosh Kamaraj,** Shanmugam Ganesan, and Selvaraj Balamurugan. "Novel indole-based photosensitizers coupled with PEG-HEC quasi-solid-state electrolyte to improve energy conversion and stability of organic dyes based-dye sensitized solar cells." **Electrochimica Acta** 389 (2021): 138771. **[IF-7.336]**
2) **Kamaraj Santhosh,** Ganesan Shanmugam, Ahalya Gunasekeran, Balamurugan Selvaraj, Eswaramoorthi Thirugnanasambandam, Mohanraj Kandhasamy, and Anandan Sambandam. "Performance of 4-Subsituted Pyridine Based Additive and Cobalt Redox in Poly (ethylene glycol)–Hydroxyethylcellulose Polymer Electrolytes with DTTCY Acid Sensitizer on Dye Sensitized Solar Cells." **Energy & Fuels** 35, no. 18 (2021): 15045-15057. **[IF-4.654]**
3) **Santhosh Kamaraj,** Shanmugam Ganesan, Selvaraj Balamurugan, Eswaramoorthi Thirugnanasambandam and Mohanraj Kandhasamy, Enhancement of Power Conversion Efficiency of Dye-Sensitized Solar Cell via Symmetrical Bi-anchoring Organic Molecules as Co-Sensitizer **Organic Electronics** 106 (2022) 106533. **[IF-3.868]**
4) Raheem Abbasriyaludeen Abdul, **Santhosh Kamaraj**, Veeman Sannasi & Chandrasekar Praveen. "New D–π-A push–pull chromophores as low band gap molecular semiconductors for organic small molecule solar cell applications." **Organic Chemistry Frontiers** 5, no. 5 (2018): 777-787. **[IF-5.456]**
5) Balamurugan, Selvaraj, Shanmugam Ganesan**, Santhosh Kamaraj**, Vinod Mathew, Jaekook Kim, Natarajan Arumugam, and Abdulrahman I. Almansour. "Effect of poly (ethylene glycol) gel polymer electrolyte consist of novel heteroleptic cobalt redox shuttle and pyridine based organic additive on performance of dye sensitized solar cells." **Optical Materials** 125 (2022): 112082. **[IF-3.754]**

6) Balamurugan Selvaraj, Ganesan Shanmugam, **Santhosh Kamaraj**, Eswaramoorthi Thirugnanasambandam, Ahalya Gunasekeran, and Anandan Sambandam. "Effect of an aqueous copper gel electrolyte with cobalt metal organic framework based additive on performance of aqueous-dye-sensitized solar cells." **Solar Energy** 236 (2022): 586-598. **[IF-7.188]**
7) Balamurugan Selvaraj, Ganesan Shanmugam, **Santhosh Kamaraj**, Ahalya Gunasekeran, and Anandan Sambandam. "Effect of 1-Substituted 2-(Pyridin-2-yl)-1 H-Benzo [d] imidazole Ligand-Coordinated Copper and Cobalt Complex Redox Electrolytes on Performance of Ru (II) Dye-Based Dye-Sensitized Solar Cells." **Inorganic Chemistry** 60, no. 3 (2021): 1937-1947. **[IF-5.436]**
8) Kandhasamy, Mohanraj, Ganesan Shanmugam, Balamurugan Selvaraj, **Santhosh Kamaraj**, Ahalya Gunasekeran, and Anandan Sambandam. "A locust bean and pectin polymer blend integrated with thio-bridged pyridinyl additive as a novel cobalt and copper gel electrolyte system for dye-sensitized solar cells." **Optical Materials** 131 (2022): 112657. **[IF-3.754]**
9) Eswaramoorthi Thirugnanasambandam, Ganesan Shanmugam, Balamurugan Selvaraj, and **Santhosh Kamaraj.** "Innovative Construction of the Cobalt Metal Complex Redox Electrolyte and Octahedron Structure of the Cobalt Metal Organic Framework Electrode in the Energy Storage and Energy Conversion System." **ACS Applied Energy Materials** 4, no. 11 (2021): 12466-12478. **[IF-6.959]**
10) Thirugnanasambandam Eswaramoorthi, Shanmugam Ganesan, Munuswamy Marimuthu, and **Kamaraj Santhosh.** "Thin niobium and iron–graphene oxide composite metal–organic framework electrodes for high performance supercapacitors." **New Journal of Chemistry** 44, no. 29 (2020): 12664-12673. **[IF-3.925]**

Personal Profile:

Communication Details
179, ULL STREET, VIRUDHUNAGR,
TAMIL NADU -626001
Mobile: +91-9843235430
E-mail: ksbabu91@gmail.com
chemistsanthosh@gmail.com

Date of Birth: 06.10.1991
Gender: Male
Nationality: Indian
Marital Status: Married
Language Known: Tamil, English, Telugu
Father Name : N.Kamaraj

References

Dr S. Ganesan
Research Supervisor
Associate Professor
Dept of Chemistry,
Faculty of Science and Humanity
SRM IST Chengalpattu, India.
Contact No: +91 9940403220
Mail ID: ganesans2@srmist.edu.in

Dr. S. Murugesan
Professor and Head, Chairperson
Dept of Inorganic Chemistry,
Madurai Kamaraj University,
Tamil Nadu, India
Contact No:+91 9444451460
Mail ID:
murugesan.chem@mkuniversity.org

Dr. Vinod Mathew
Research Professor
Department of Materials Science and Engineering, Chonnam National University,
Republic of Korea
Contact No:+82-10-9967-0618
Mail ID: bethelvinod@gmail.com