

CURRICULUM VITAE

Dr. SUBRAMANI KAIPANNAN

Postdoctoral Fellow,
Department of Materials Science and Engineering,
Norwegian University of Science and Technology,
NO-7491 Trondheim, Norway.

Email: mani.mani601@gmail.com

Mobile No.: +916383464306

<https://scholar.google.co.in/citations?user=McXRXvYAAAAJ&hl=en>

https://www.researchgate.net/profile/Subramani_Kaipannan

<https://www.ntnu.edu/employees/kaipannan.subramani>



Current Research

- ✚ **BIOANODE** project - Conversion of Biomass resource from industry into hard carbons as greener **ANODE** for sodium ion battery - funded by the Research Council of Norway.

Previous Research in Industry

- ✚ Benchmarking exercise and creating baseline data & process establishment for cathode and anode electrodes, cell making process, and testing process for sodium ion battery (SIB) and Lithium-ion battery (LIB).
- ✚ Pre-Pilot cathode active material (CAM) synthesis with desired morphology and high tap density for SIB and LIB.
 - Air stable Ni based Layered Oxides for SIB
 - LFP and LMFP for LIB.
- ✚ Pre-Pilot Anode active material synthesis with desired surface area, porosity and high tap density for SIB.
 - Hard Carbon derived from bio mass, natural polymer and synthetic polymer.
- ✚ Supplier qualification, materials evaluation and process development / Improvement to support manufacturing

Research Experience

Jan-2024 to till date : **Postdoctoral Fellow**
*Department of Materials Science and Engineering,
Norwegian University of Science and Technology,
NO-7491 Trondheim, Norway.*

Aug-2021 to Jan-2024 : **Manager**
*Reliance Industries Limited (RIL)
Navi Mumbai- 400701, Maharashtra, India.*

April-2019 to July-2021: **Research Associate**
CSIR-Central Electrochemical Research Institute (CECRI)
Karaikudi-630 003, Tamil Nadu, India.

Nov-2015 to Dec-2018: **Senior Research Fellow (SRF)-DST-INSPIRE**
CSIR-Central Electrochemical Research Institute (CECRI)
Karaikudi-630 003, Tamil Nadu, India.

Jan-2014 to Nov-2015: **Junior Research Fellow (JRF)-DST-INSPIRE**
CSIR-Central Electrochemical Research Institute (CECRI)
Karaikudi-630 003, Tamil Nadu, India.

Academic Profile

2014–2019 **Doctor of Philosophy (Physical Sciences)**
CSIR-Academy of Scientific and Innovative Research (AcSIR)
CSIR-Central Electrochemical Research Institute (CSIR-CECRI)
Karaikudi-630 003, Tamil Nadu, India.

2011–2013 **Master of Science (Nano Science and Technology)**
Department of Nano Science and Technology
Alagappa University
Karaikudi-630 003, Tamil Nadu, India.
Subjects: Nanoscience and Nanotechnology, Materials Science, Nano Chemistry, Nano Biotechnology, and Advanced Characterization Techniques.

2007–2010 **Bachelor of Science (Physics)**
Department of Physics
Arulmigu Palaniandavar College of Arts and Culture
(Affiliated to Madurai Kamaraj University, Madurai)
Palani – 624 601, Tamil Nadu, India.
Subjects: Physics, Chemistry and Mathematics.

Ph. D. Dissertation

Title: ***"Reduced Graphene Oxide-Based Nanocomposites and Bio-derived Carbon for Supercapacitor Applications"***

Research Supervisor: **Dr. M. Sathish**, Scientist, CSIR-CECRI & Asst. Professor, AcSIR
Institute: **CSIR-Central Electrochemical Research Institute**, Karaikudi-630 003, Tamil Nadu, India.

CSIR – AcSIR Best PhD Thesis Award in Physical Science 2020, CSIR, New Delhi, India.

Master's Dissertation (three months)

Title: ***"Synthesis and Characterization of RGO-Mn₃O₄ Nanocomposite for Supercapacitor Application"***

Research Supervisor: **Dr. M. Sathish**, Scientist / **Dr. A. Arumugam**, Assistant professor
Institute: **Central Electrochemical Research Institute**, Karaikudi – 630 003, Tamil Nadu, India.

Publications (Total: 35, First Author: 15; Citations: 2504, h - index: 25, i10 -

index: 33) (Q1 - 24 & Q2 – 9; Book Chapter: 1) Total IF 219.64; Ave. IF 6.46

1. Vignesh, V.; [Subramani, K.](#); Sathish, M.; Navamathavan, R., "Design and fabrication of supercapacitors, Chapter 15, *Smart Supercapacitors*, 2023, 361-404. (DOI: [10.1016/B978-0-323-90530-5.00012-5](#)).
2. SM Tauquir, M Karnan; [Subramani, K.](#); Sathish, M. "One-step superficial electrodeposition of nickel-cobalt-sulfide for high-energy hybrid asymmetric supercapacitor" *Materials Letters*, 2022, 323, 132563. [10.1002/sml.202106051](#) (IF: 3.574) (Q2)
3. Nasrin, K; Sudharshan, V; Karnan, M; [Subramani, K.](#); Sathish, M. "In-Situ Synergistic 2D/2D MXene/BCN heterostructure for superlative energy density supercapacitor with super-long life" *Small*, 2022, 18 (4), 2106051. [10.1002/sml.202106051](#) (IF: 15.153) (Q1)
4. Nasrin, K; Sudharshan, V; [Subramani, K.](#); Sathish, M. "In-Situ Synergistic 2D/2D MXene/BCN heterostructure for superlative energy density supercapacitor with super-long life" *Advanced Functional Materials*, 2022, 32 (18), 2110267. [10.1002/adfm.202110267](#) (IF: 19.924) (Q1)
5. [Subramani, K.](#); Shunmugasundaram, S; Velu, D; Ilavarasi, R; Senthil Kumar, SM; Sathish, M. "Dual heteroatoms doped SBA-15 templated porous carbon for symmetric supercapacitor in dual redox additive electrolyte" *Journal of Colloid and Interface Science*, 2021, 606, 286-297. [10.1016/j.jcis.2021.08.002](#) (IF: 9.965) (Q1)
6. Nasrin, K; Gokulnath, S; Karnan, M; [Subramani, K.](#); Sathish, M. "Redox-additives in Aqueous, Non-Aqueous and All-Solid-State Electrolytes for Carbon-based Supercapacitor: A Mini-Review" *Energy & Fuels*, 2021, 35 (8), 6465–6482. [10.1021/acs.energyfuels.1c00341](#) (IF: 4.654) (Q1)
7. Manikandan, M; [Subramani, K.](#); Sathish, M; Dhanuskodi S. "Nickel Cobalt Telluride Nanorods for Hybrid High Energy Storage Applications" *Energy & Fuels* 2021, 35 (15), 12527–12537. [10.1021/acs.energyfuels.1c00351](#) (IF: 4.654) (Q1)
8. Nasrin, K; [Subramani, K.](#); Karnan, M; Sathish, M., "MnCo₂S₄ – MXene: A Novel Hybrid Electrode Material for High Performance Long-life Asymmetric Supercapattery" *Journal of Colloid and Interface Science* 2021, 600, 264-277. [10.1016/j.jcis.2021.05.037](#) (IF: 9.965) (Q1)
9. Sandhiya, M; [Subramani, K.](#); Sathish, M, "Augmenting the Electrochemical Performance of NiMn₂O₄ by Doping of Transition Metal Ions and Compositing with rGO" Revised in *Journal of Colloid and Interface Science* 2021, 598, 409-418 ([10.1016/j.jcis.2021.04.023](#)). (IF: 9.965) (Q1)
10. Amreetha, S; Manikandan, K; Brahmananda Chakraborty, Dhanuskodi, S; Nithya, A; Jothivenkatachalam, K; [Subramani, K.](#); Pandikumar, A; Sathish, M; Manivannan and Venugopal Rao Soma. "TiO₂/Carbon Allotrope Nanohybrids for Supercapacitor Application with Theoretical Insights from Density Functional Theory" *Applied Surface Science* 2021, 563, 150259. ([10.1016/j.apsusc.2021.150259](#)) (IF: 7.392) (Q1)
11. Samantray, R; Karnan, M.; Vivekanand; [Subramani, K.](#); Mishra, S. C.; and Sathish, M. A facile approach on porous carbon derived from Saccharum spontaneum based supercapacitor with excellent energy storage performance in redox active electrolyte, *Sustainable Energy & Fuels*, 2020, 5 (2), 518-531. ([10.1039/D0SE01420F](#)) (IF: 6.813) (Q1)

12. Murugan, C; [Subramani, K](#); Subash, R; Sathish, and M; Pandikumar, A, Synergistic Effect of Faradaic and Non-Faradaic Process in Graphitic Carbon Nitride/Bismuth Vanadate Nanohybrid Materials for High-Performance High Voltage Symmetric Supercapacitor, *Energy & Fuels*, 2020, 34 (12), 16858-16869. (10.1021/acs.energyfuels.0c03261) (IF : 4.654) (Q1)
13. Vinoth; D; [Subramani, K](#); Sathish, and M; Pandikumar, A. "CoS₂ Engulfed in An Ultra-thin S-Doped Graphitic Carbon Nitride Framework and Its Impressive Electrochemical Performance in Hybrid Asymmetric Supercapacitor". *Journal of Colloid and Interface Science*, 2021, 58, 204-215. (DOI: 10.1016/j.jcis.2020.09.071). (IF: 9.965) (Q1)
14. Karnan, M.; Suresh Balaji, S; [Subramani, K](#); Karthick Raj, AG; Sannasi, V and Sathish, M. Electrochemical Performance of Thespesia Populnea Seeds Derived Activated Carbon - Supercapacitor and Its Improved Specific Energy in Redox Additive Electrolytes, *Journal of Energy Storage*, 2020, 32, 101939. (DOI: 10.1016/j.est.2020.101939). (IF: 8.907) (Q1)
15. [Subramani, K](#); Anandha Ganesh, P; Karnan, M; Santhoshkumar, S; Kaviarasan, G; Sundar, M; Sathish, M. Waste engine oil derived porous carbon/ZnS Nanocomposite as Bi-functional electrocatalyst for supercapacitor and oxygen reduction, *Journal of Energy Storage*, 2020, 32, 101774 (DOI: 10.1016/j.est.2020.101774). (IF : 8.907) (Q1)
16. Manikandan, M; [Subramani, K](#); Sathish, M; Dhanuskodi S. Hydrothermal Synthesis of Cobalt Telluride Nanorods for High Performance Hybrid Asymmetric Supercapacitor, *RSC Adv*. 2020, 10 (23), 13632-13641. (DOI: 10.1039/C9RA08692G) (IF : 4.036) (Q2)
17. Karnan, M.; Karthick Raj, AG; [Subramani, K](#); Santhoshkumar, S and Sathish, M. Fascinating the Supercapacitive Performance of Activated Carbon Electrodes with Enhanced Energy Density in Multifarious Electrolytes, *Sustainable Energy & Fuels*, 2020, 4, 3029-3041. (DOI: 10.1039/C9SE01298B) (IF : 6.813) (Q1)
18. Natarajan, S; [Subramani, K](#); Yun-Sung Lee; Sathish, M, Aravindan, V; Sandwich layered Li_{0.32}Al_{0.68}MnO₂(OH)₂ from spent Li-ion battery to build high-performance supercapacitor: Waste to energy storage approach; *Journal of Alloys and Compounds*, 2020, 827, 154336 (DOI: 10.1016/j.jallcom.2020.154336). (IF : 6.371) (Q1)
19. [Subramani, K](#).; Kaviarasan, G; Santhoshkumar, S and Sathish, M. Waste Toner Derived Carbon-Fe₃O₄ Nanocomposite for High-performance Supercapacitor, *ACS Omega*, 2019, 4, 14, 15798-15805 (DOI: 10.1021/acsomega.9b01337). (IF : 4.132) (Q1)
20. Vignesh, V.; [Subramani, K](#).; Sathish, M.; Navamathavan, R., Synthesis of GNS-MnS hybrid nanocomposites for enhanced electrochemical energy storage applications, *Materials Chemistry and Physics*, 2019, 230, 249-257 (DOI: 10.1016/j.matchemphys.2019.03.070). (IF : 4.778) (Q1)
21. [Subramani, K](#).; Sathish, M. Fabrication of 9.6 V High-performance Asymmetric Supercapacitors Stack Based on Nickel Hexacyanoferrate-derived Ni(OH)₂ Nanosheets and Bio-derived Activated Carbon, *Sci. Rep.* 2019, 9, 1104. (DOI: 10.1038/s41598-018-37566-8) (IF : 4.996) (Q1)
22. [Subramani, K](#).; Sathish, M. Facile synthesis of ZnO nanoflowers/reduced graphene oxide nanocomposite using zinc hexacyanoferrate for supercapacitor applications, *Materials Letters*, 2019, 236, 424–427. (DOI: 10.1016/j.matlet.2018.10.111) (IF : 3.574) (Q2)
23. Manikandan, M; [Subramani, K](#); Sathish, M; Dhanuskodi S. NiTe Nanorods as Electrode Material for High Performance Supercapacitor Applications, *ChemistrySelect*, 2018, 3, 9034–9040. (DOI: 10.1002/slct.201801421) (IF : 2.307) (Q2)

24. [Subramani, K.](#); Sudhan, N.; Karnan, M.; Sathish, M, Orange Peel Derived Activated Carbon for Fabrication of High-Energy and High-Rate Supercapacitors, *ChemistrySelect*, 2017, 2, 11384–11392. (DOI: [10.1002/slct.201701857](#)) (IF : 2.307) (Q2)
25. Vignesh, V.; [Subramani, K.](#); Sathish, M.; Navamathavan, R., Electrochemical investigation of manganese ferrites prepared via a facile synthesis route for supercapacitor applications, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2018, 538, 668–677. (DOI: [10.1016/j.colsurfa.2017.11.045](#)) (IF : 5.518) (Q1)
26. Amutha, B.; [Subramani, K.](#); Pula Nagesh Reddy; Sathish, M, Graphene-Polymer//Graphene-Manganese Oxide Nanocomposites Based Asymmetric High Energy Supercapacitor with 1.8 V Cell Voltage in Aqueous Solution, *ChemistrySelect*, 2017, 2 (33), 10754–10761. (DOI: [10.1002/slct.201701979](#)) (IF : 2.307) (Q2)
27. Karnan, M.; [Subramani, K.](#) and Sathish, M. Template-Assisted Synthesis of Nitrogen-doped 3D-Graphene for Supercapacitor Applications, *Materials Today: Proceedings*, 2017, 4 (11), 12144–12151. (DOI: [10.1016/j.matpr.2017.09.143](#)) (IF : NA)
28. [Subramani, K.](#); Sudhan, N.; Divya, R.; Sathish, M. All-Solid-State Asymmetric Supercapacitors Based on Cobalt Hexacyanoferrate-Derived CoS and Activated Carbon, *RSC Adv.* 2017, 7, 6648–6659. (DOI: [10.1039/C6RA27331A](#)) (IF : 4.036) (Q2)
29. Rana, M.; [Subramani, K.](#); Sathish, M.; Gautam, U. K. Soya Derived Heteroatom Doped Carbon as a Promising Platform for Oxygen Reduction, Supercapacitor and CO₂ Capture, *Carbon* 2017, 114, 679–689. (DOI: [10.1016/j.carbon.2016.12.059](#)) (IF : 11.307) (Q1)
30. Karnan, M.; [Subramani, K.](#); Srividhya, P. K.; Sathish, M. Electrochemical Studies on Corncob Derived Activated Porous Carbon for Supercapacitors Application in Aqueous and Non-Aqueous Electrolytes, *Electrochim. Acta* 2017, 228, 586–596. (DOI: [10.1016/j.electacta.2017.01.095](#)) (IF : 7.336) (Q1)
31. Sudhan, N.; [Subramani, K.](#); Karnan, M.; Ilayaraja, N.; Sathish, M. Biomass-Derived Activated Porous Carbon from Rice Straw for a High-Energy Symmetric Supercapacitor in Aqueous and Non-Aqueous Electrolytes, *Energy & Fuels* 2017, 31, 977–985. (DOI: [10.1021/acs.energyfuels.6b01829](#)) (IF : 4.654) (Q1)
32. Karnan, M.; [Subramani, K.](#); Sudhan, N.; Ilayaraja, N.; Sathish, M. Aloe Vera Derived Activated High-Surface-Area Carbon for Flexible and High-Energy Supercapacitors, *ACS Appl. Mater. Interfaces* 2016, 8, 35191–35202. (DOI: [10.1021/acsami.6b10704](#)) (IF : 10.383) (Q1)
33. [Subramani, K.](#); Kowsik, S.; Sathish, M. Facile and Scalable Ultra-Fine Cobalt Oxide/Reduced Graphene Oxide Nanocomposites for High Energy Asymmetric Supercapacitors, *ChemistrySelect* 2016, 1, 3455–3467. (DOI: [10.1002/slct.201600792](#)) (IF : 2.307) (Q2)
34. [Subramani, K.](#); Lakshminarasimhan, N.; Kamaraj, P.; Sathish, M. Facile and Scalable Route to Sheets-on-Sheet Mesoporous Ni–Co-Hydroxide/reduced Graphene Oxide Nanocomposites and Their Electrochemical and Magnetic Properties, *RSC Adv.* 2016, 6, 15941–15951. (DOI: [10.1039/C5RA27775B](#)) (IF : 4.036) (Q2)
35. [Subramani, K.](#); Jeyakumar, D.; Sathish, M. Manganese Hexacyanoferrate Derived Mn₃O₄ Nanocubes-Reduced Graphene Oxide Nanocomposites and Their Charge Storage Characteristics in Supercapacitors, *Phys. Chem. Chem. Phys.* 2014, 16, 4952–4961. (DOI: [10.1039/C3CP54788D](#)) (IF : 3.945) (Q1)

Conference Participation & Presentations

International Conference	National Conference	Oral Presentation	Poster Presentation	ECS Summer school
04	13	06	08	03

Awards & Honours

- June-2013:** University first rank holder (**Gold medalist**), Alagappa University, Karaikudi.
- Jan -2014:** **DST-INSPIRE Fellow** (IF131153), Department of Science and Technology, India.
- Sep -2015:** “CSIR foundation day exhibition” (**Third prize**) at CSIR-CECRI, Karaikudi.
- March-2016:** Best poster award (**First prize**), at “8th International Conference on Bangalore INDIA NANO-2016, Bangalore, India.
- Dec-2016:** Best poster award (**First prize**), at “India International Science Festival–2016 (IISF-2016), **CSIR-National Physical Laboratory (CSIR-NPL), New Delhi, India.**
- Oct-2017:** Best paper award (**First prize**), at “**Reaching the Unreached Through Science and Technology - Concepts, Principles and Applications of Science and Technology for Nation Building**”, Kongunadu Arts and Science College, Coimbatore, India.
- Feb-2021** **CSIR – AcSIR Best PhD Thesis Award in Physical Science 2020, CSIR, New Delhi, India.**

Professional Society Membership

- Student Member, The Electrochemical Society, USA.
- Life Member, Energy Science Society of India (ESSI),
(ID no: 1103201605 L)

Personal details

Father's Name : K. Kaipannan
Mother's Name : K. Amsammal
Date of Birth : 23-10-1989
Gender : Male
Nationality : Indian
Permanent Address : 1/125, East Streets,
Kookkal (PO), Kodaikanal-624 103,
Tamil Nadu, India.

Attitude: Ability to resolve various research problems independently
Flexibility and cooperative in a team for collaborative work
Hard work and accepting challenges towards productive research

Hobbies: Sports (Cricket, football, and volleyball).
Agricultural work & Social activity

Languages: English, Tamil (Mother tongue)

References

1. Dr. M. Sathish

Principal Scientist,
Electrochemical Power Sources Division
CSIR-Central Electrochemical Research Institute
Karaikudi -630 003, Tamil Nadu, INDIA.
Tel: +91-4565-241443 (Off.); +91-9751812398 (Mobile)
Web: <http://www.cecri.res.in/>
E-mail: marappan.sathish@gmail.com / msathish@cecri.res.in

2. Dr. N Lakshminarasimhan

Principle Scientist,
Electro-organic and Materials Electrochemistry Division,
CSIR-Central Electrochemical Research Institute,
Karaikudi -630 003, Tamil Nadu, INDIA.
Office: +91-4565-241292 (Off.); +91-94876 21820 (Mobile)
Web: <https://nlnsimha.wixsite.com/laks>
E-mail: laksnarasimhan@cecri.res.in / nlnsimha@gmail.com

3. Dr. A. Pandikumar

Senior Scientist
Electro-organic and Materials Electrochemistry Division
CSIR-Central Electrochemical Research Institute
Karaikudi -630 003, Tamil Nadu, INDIA.
Tel: +91-4565-241447 (Off.); +91-9994228483 (Mobile)
Web: <https://pandikumarinbox.wixsite.com/drapk>
E-mail: pandikumar@cecri.res.in

Declaration

I hereby declare that all the above-furnished details are true to the best of my knowledge.

Yours truly,



(K. Subramani)