Dr.Sudha Kamath.M.K

Designation :Associate Professor
Deputy Warden: RVCE DJ Girls Hostel

Qualification :M.Sc., M.Phil. Ph.D
Experience :Teaching-30 years
Area of Interest :Polymer composites and Thin films;
Energy storage devices- Supercapacitors.

Date of Joining at RVCE :13/04/2000
Email ID :sudhakamath@rvce.edu.in

Project:
Funded Project : 01
Number of Doctorate Students

Completed: 02 Guiding: 01

Publication

National Journals	National Conferences	International Journals	International Conferences	Book/Book Chapter Published	Patent Granted/Published
05	11	15	1		01/02

List of International Journal Publications:

1. S. Beena, Chandresh Kumar Rastogi, Yash Athreya, K P Shwetha, Nelsa Abraham, Suresh Babu Viswanathan, **M K Sudha Kamath**, C Manjunatha " Unveiling the supercapattery behaviour of novel kotoite-type $Co_3(BO_3)_2$ nanoparticles", Journal of Energy storage, Volume 110 (2025) 115299. https://doi.org/10.1016/j.est.2025.115299.
2. K.P. Shwetha, **M.K. Sudha Kamath**, Chandresh Kumar Rastogi, Yash Athreya, Sooryadas Sudhakaran, C. Manjunatha, "Tailored carbon nanotube-CoS2 nanocomposites for the development of asymmetric supercapacitor coin cells demonstrating enhanced electrochemical properties" Journal of Energy storage, Volume 97, 1 September 2024, 112699. https://doi.org/10.1016/j.est.2024.112699
3. K. P. Shwetha, **M K Sudha Kamath**, Yash N Atreya, Chandresh Kumar Rastogi, Kathyayini Nagaraju, Ajith Khosla, C Manjunatha, "Development of NiS@f-MWCNT nanocomposite-based high-performance supercapacitor coin cell prototype device" , Journal of Energy storage, Volume 75, 1 January 2024, 109404.1. https://doi.org/10.1016/j.est.2023.109404.
4. Beena Somanath, Manjunatha C, Yash Athreya, Shwetha K P, Nelsa Abraham, Suresh babu Vishwanathan, **Sudha Kamath M K**, S Girish Kumar and Ajith Khosla," Scalable Synthesis of Ni3B2O6 Nanograins and Fabrication of a Coin Cell Supercapacitor for Powering Temperature Sensor Devices", ACS Applied Electronic Materials, 2023,Volume 5, Issue 9, Pages 4690-5257. https://doi.org/10.1021/acsaelm.3c00765
5. K.P. Shwetha, C. Manjunatha c, **M.K. Sudha Kamath**, Chandresh Kumar Rastogi, Vivek Chaudhary, Gyanprakash Maurya, Yash Athreya, B.W. Shivaraj, Ajit Khosla, "Fabrication of super-high energy density asymmetric supercapacitor prototype device employing NiCo2S4@f-MWCNT nanocomposite", Journal of Energy Storage, 72 (2023) 108657. https://doi.org/10.1016/j.est.2023.108657.
6. V. M. Ashwini Chavan, C.Manjunatha, K.P.Shwetha, G. Shireesha, S. Girirsh Kumar, **M. K. Sudha Kamath,** Sumira Malik, Ajith Khosla, "Probing the influence of mixed alkaline electrolytes towards the fabrication of melamine- derived porousCo3O4 based supercapacitor", Materials Chemistry and Physics, 308 (2023)128209. https://doi.org/10.1016/j.matchemphys.2023.128209.
7. M.G.Radhika, R. Srilakshmi, V.Tejashree, KrishnaVenkatesh, **M.K. Sudha Kamath** , Kathyayini Nagaraju, "A new strategy for the morphology-controlled synthesis of Ni/Co MOFs for high-performance asymmetric supercapacitors", Journal of Energy Storage, 61 (2023) 106766. https://doi.org/10.1016/j.est.2023.106766.
8. K.P. Shwetha, S.G. Divakara, **M.K. Sudha Kamath,** Tribrikram Gupta, "Synthesis and electrochemical characterization of mesoporous graphitic carbon nitride for super capacitorapplications"MaterialsToday:Proceedings,https://doi.org/10.1016/j.matpr.2023.01.049.
9. Manjunatha C, Shwetha KP, Yash Athreya, Girish Kumar S, **Sudha Kamath MK**, "Perspective — Supercapacitor Powered Flexible Wearable Strain Sensors" ECS Sensors Plus, 2 (1), 017002 10.1149/2754-2726/acb27a
10. K.P. Shwetha, Yash Athreya, L. Suraj, Chandresh Kumar Rastogi, **M.K. Sudha Kamath***, K. Natarajan, Ajit Khosla g, C. Manjunatha, " Recent developments of hybrid metal chalcogenides for high performance supercapacitors, Materials Today: Proceedings" https://doi.org/10.1016/j.matpr.2022.09.543.
11. Radhika M Ga , Gopalakrishna Byatarayappa , Deepak V. Ingale, Lakshminarayana Kudinalli Gopalakrishna Bhatta Krishna Venkatesh, **Sudha Kamath M K,** Kathyayini Nagaraju, " High performance of asymmetric coin cells designed using optimized weight

percentage of multiwalled carbon nanotubes in Ni/ Co-MOFs nanocomposite", Materials Research Bulletin, 156 (2022) 111996, https://doi.org/10.1016/j.materresbull.2022.111996.

12. Kollur Prabhakarrao Shwetha, Channegowda Manjunatha, Mangalore Krishna **Sudha Kamath,** Vinaykumar, Mallesara Ganesh Rao Radhika, Ajit Khosla, "Morphology‐controlled synthesis and structural features of ultrafine nanoparticles of Co3O4: An active electrode material for a supercapacitor" Applied Research. 2022;e202200031. wileyonlinelibrary.com/journal/ https://doi.org/10.1002/appl.202200031.
13. M G Radhika, B Gopalakrishna, K Chaitra, Lakshminarayana Kudinalli Gopalakrishna Bhatta,Krishna Venkatesh, M K Sudha Kamath and N Kathyayini. "Electrochemical studies on Ni, Co & Ni/Co-MOFs for high-performance hybrid supercapacitors", Materials Research Express, 7,(5), 054003, 2020. https://iopscience.iop.org/article/10.1088/2053-1591/ab8d5d
14. **Sudha Kamath M K,** Chandramani R, Radhakrishna M C. " Influence of Rare Earth Ion Lanthanum on Physical Properties of Biodegradable Polymer Blend PVA/PVP" Asian Journal of Applied Sciences, Volume 03-Issue 04 August 2015.
15. **Sudha Kamath M K**, Chandramani R, Radhakrishna M C. "PVP Influence on PVA crystallinity and Optical band gap" Archieves of Physics Research, 2015, 6(2):18-21

List of National Conference Publications:

1. Shwetha K P**, Sudha Kamath M K,** Manjunatha C**,** "NiS//MWCNT-based supercapacitor for efficient energy storage" IEEE xplore 2024.
2. D N Avadhani, B M Rajesh, S Shubha, **M K Sudha Kamath**,"Critical thinking in model-based simulation of Simple Harmonic Oscillator using Scilab: Xcos" National conference on Critical thinking for GENZ-Multidisciplinary Approach, (CTGZMA-2021) 28-29 November 2021.
3. **Sudha Kamath M K**, Chandramani R, Radhakrishna M C. "Nanoindentation Investigations on Cobalt doped PVA/PVP Polymer Blend Composites. RIESMS-2015 ISBN 978-93-5254-017-4
4. **Sudha Kamath M K**, Chandramani R, Radhakrishna M C. "Influence of $MnSO_4$ and $MnCl_2$ dopants on PVA/PVP Polymer Blend- A comparative study based on Electrical Investigations" AFM-2015 ISBN:978-93-85682-04-9.
5. **Sudha Kamath M K**, Chandramani R, Radhakrishna M C. "Nanoindentation investigations on MnCl2 doped PVA/PVP polymer blend composites". Carmelight, A multidisciplinary national journal, volume 12(1):156-164, 2016.

International Conference Attended:

- 2nd International Roboticist Forum 20-21 November 2023, Schweinfurt, Germany.

List of International Conference Presentations:

1. "NiS//MWCNT-based supercapacitor for efficient energy storage" 8th IEEE International Conference on Computational Systems & Information Technology for Sustainable Solutions (CSITSS), held from 7th to 9th November, 2024.
2. "High-Performance Mn3O4 Nanowires as Anode Materials for Supercapacitors" International Symposium on Ceramics & Advanced Materials For Green Energy Value chain -Green energy materials meet (GEM MEET-2024)
3. "Synthesis and Electrochemical Characterization of Mesoporous Graphitic Carbon Nitride for Supercapacitor Applications" International Conference on Advances in Chemical and Materials Sciences (ACMS-2022) April 14 - 16, 2022.

4. "Electrochemical studies on Polyaniline/Titanium dioxide composites for aqueous supercapacitors" First International Conference on Technologies for Smart Green connected Society 2021 (ICTSGS-1) 29-30 November 2021.
5. "Supercapacitors –Futuristic energy storage devices for electric vehicles" First International Conference on Technologies for Smart Green connected Society 2021" (ICTSGS-1) 29-30 November 2021.
6. "Electrochemical studies on Ni, Co and Ni/Co/MOF for high performance hybrid supercapacitors" 2nd international conference on Nanoscience and Nanotechnology, VIT, Vellore, 2020.
7. "Synthesis and Characterization of Polyaniline/Titanium oxide composites via insitu chemical oxidative polymerization for supercapacitors" International conference on Innovations and Challenges in Science and Technology (ICICST-2018) organized by department of Science and Humanities, Don Bosco Institute of Technology, Mysore Road, Bengaluru, May 2018.
8. "Supercapacitors based on Polythiophene derivatives" International conference on Innovations and challenges in Science and Technology (ICICST-2018) organized by Department of Science and Humanities, Don Bosco Institute of Technology, Mysore Road, Bengaluru, May 2018.
9. "Spectroscopic investigations and Dielectric properties of PVA/PVP blend filled with different concentrations of Cobalt Chloride" 1st International Conference on Large Area and Flexible Microelectronics (ILAFM-2014) at R V College of Engineering, Bengaluru, December 2014.
10. "Electrical, Optical and Structural investigations of Electrolyte Films-Pure and $MnSO_4$ doped PVA/PVP Polymer Blend" Presented at ICMAT-13 organized by Materials Research Society, Singapore ,30th June to 5th July 2013.
11. "Structural and Optical properties of PVA/PVP polymer blends" presented in the International Conference on Recent Trends in Advanced Materials (ICRAM-2012) at VIT University, Vellore, February 2012.

Research Project

Co-Investigator for a project titled "**Characterization of electric double layer supercapacitor with CNT-Conducting polymer/Metal Oxide composites and Nano dielectrics".** in collaboration with Department of Electrical and Electronics engineering. **Funding Agency:** Central Power Research Institute (CPRI) Bengaluru.

Amount Sanctioned: 16 lakhs, **Period of project:** 2016-2018.

No. Ph Ds produced :02

No. Ph Ds guiding :01

Patents Granted/Published:

P**atent 1:** Da**te of Publication: 17/02/2023. Patent Office Journal No./ Page No: 07/2023;11242.**

Grant of patent on 27-03-2025.

Method of synthesizing $NiSe_2$ Active Electrode Nanoparticles for High Energy Density Asymmetric Supercapacitor Coin Cell. Inventors: 1) Manjunatha C, 2) Shwetha K P, 3) **Sudha Kamath M K,** 4) Yash Athreya, 5) Suraj L, 6) Shweta A Ram, 7) Ananda Islakar, 8) Rajalakshmi

M. Applicant: RV College of Engineering. Applicant: RV College of Engineering. Mysore Road, R. V. Vidyaniketan Post, Bangalore – 560059, Karnataka, India. Bangalore.

Patent 2: Date of Publication: 14/04/2023.Patent Office Journal No./ Page No: 15/2023; 31703.

Grant of patent on 11-03-2025.

A Preparation Method of Tungsten Oxide Nanocubes having High-Specific Capacitance for Electrochemical Energy Storage Applications. Inventors: 1) Manjunatha C, 2) Shwetha K P, 3) **Sudha Kamath M K**, 4) Yash Athreya, 5) Suraj L, 6) Vinay Kumar, 7) Mamtha V. Applicant: RV College of Engineering. Mysore Road, R. V. Vidyaniketan Post, Bangalore – 560059, Karnataka, India. Bangalore.

Patent 3: Date of Filing of Application: 28/12/2023. **A Two-Step Synthesis Method for Preparing $NiSe_2$@WO_3 Nano-Composite.** Inventors: 1) Manjunatha C, 2) Shwetha K P, 3) **Sudha Kamath M K,** 4) Yash Athreya, 5) Suraj L. Applicant: RV College of Engineering. Mysore Road, R. V. Vidyaniketan Post, Bangalore – 560059, Karnataka, India. Bangalore. Application Number: 202341089261.

Awards:

1. Certification of excellence in research: Recognized with quality publication award for outstanding contributions to quality journal publications in 2023 by ISTE RCE Chapter.
2. Best paper presentation in an International Conference on Advances in Chemical and Materials Sciences (ACMS-2022) April 14 - 16, 2022.\
3. Best paper presentation in a National Conference on Advanced Functional Materials (AFM-2015).
4. Excellence in teaching for the year 2006-2007 by Career launcher (Inspiring Leadership)

Invited talks delivered:

1. Delivered a talk on “Criterion -8 of NBA- First year Academics” at AICTE sponsored Share and Mentor Institutions (Margdarshan) Scheme Faculty Development Programme (FDP) on Accreditation Process – NBA with a Focus on Active Learning, 21st October 2022 at RVCE.
2. Delivered a talk on “Enhancement of first year academics” at AICTE sponsored Share and Mentor Institutions (Margdarshan) Scheme Faculty Development Programme (FDP) on Accreditation Process –10th July 2020 at RVCE.

Internships carried out:

1. Conducted certificate course on “study of metal chalcogenides as electrode materials for supercapacitor applications”, RVCE internship- UG under “Centre for Nanomaterials and Devices” during 17-11-2021 to10-12-2022. (4 weeks). (Mr. Tej Prashanth Nilkund (1RV21me112) &Mr. Suhas P (1RV21ME106))
2. Conducted certificate course on “Supercapacitors –Futuristic Energy Storage Devices For E-Vehicles”, RVCE internship-PG under Centre of Excellence e-mobility during 1-09-2021 to14-10-2021 (6 weeks).
3. Conducted certificate course on “Supercapacitors –Futuristic Energy Storage Devices For E-Vehicles”, RVCE internship-UG under Centre of Excellence e-mobility during 1-09-2021 to 30-09-2021 (4 weeks).

4. Conducted certificate course on “Three-dimensional (3D) modelling of Baja Chassis using Solid works”, RVCE internship-UG under Centre of Excellence e-mobility during August-September 2020 (4 weeks).
5. Conducted certificate course on “Design and performance analysis of supercapacitor for e-vehicles”, RVCE internship-UG under Centre of Excellence e-mobility during August-September 2020 (4 weeks).

External Connect:

1. VTU nominee: BoS M S Ramaiah Institute of Technology. Bengaluru.
2. Member BoS-BMS College of Engineering. Bengaluru.
3. Member BoE- BMS College of Engineering. Bengaluru.
4. Member BoE-Bangalore University.
5. Member BoE-Global Academy of Technology. Bengaluru.
6. Member BoE-Nitte Meenakshi Institute of Technology. (NMIT), Bengaluru.
7. Member BoE-Mangalore Institute of Technology & Engineering (MITE), Moodbidri.
8. Member BoE-Don Bosco Institute of technology, Bengaluru.
9. Member Research Advisory Committee (RAC)- M S Ramaiah Institute of Technology. Bengaluru.
10. Member Research Advisory Committee (RAC)- R R Institute of technology, Bengaluru.