

Dr. Swapnajit Vijay Mulik (*M.Sc., Ph.D., SET*)

Designation: Assistant Professor

PERSONAL DETAILS:

Date of birth: 25th June 1996

Nationality: Indian

Sex: Male

Languages Known: English, Hindi, Marathi

Contact No. +91 8421946560

Email: swapnajitmulik@gmail.com



EDUCATIONAL QUALIFICATION

2024 (Onwards)	<i>Assistant Professor</i> Dattajirao Kadam, Arts, Science and Commerce, College, Ichalkaranji.
2024	<i>Ph.D.</i> University: Shivaji University, Kolhapur (Maharashtra, M.S.), India Ph.D Title: Functional Nanocomposites of Metal Oxides-Carbon Nanostructures-Conducting Polymer for Supercapacitor Application Guide: <i>Prof. Sagar D. Delekar (Professor, Shivaji University, Kolhapur)</i>
2023	<i>SET in (Chemical Sciences)</i> University: Pune University
2019	<i>M.Sc. in Organic Chemistry (first class with Distinction),</i> College: Balwant College, Vita. University: Shivaji University, Kolhapur (Maharashtra, M.S.), India Project Title: CuO Nanoparticles and Nanobelts Catalyzed Potent Synthesis of Benzopyran Derivatives Advisor: <i>Dr. Abhijeet G. Mulik (Assistant Professor SGM college, Karad)</i>
2017	<i>B.Sc. in Chemistry (first class),</i> Balwant College, Vita (Maharashtra, M.S.), India

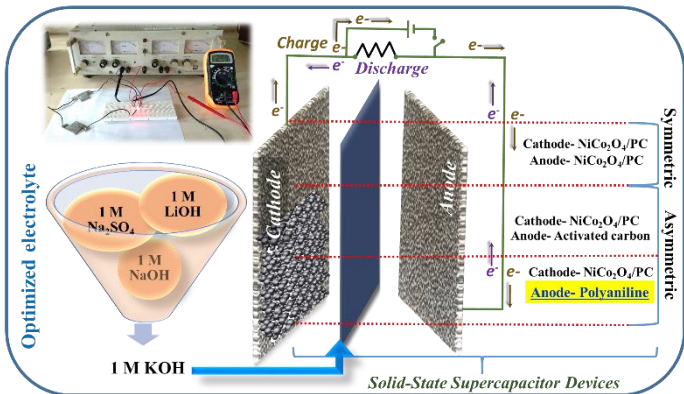
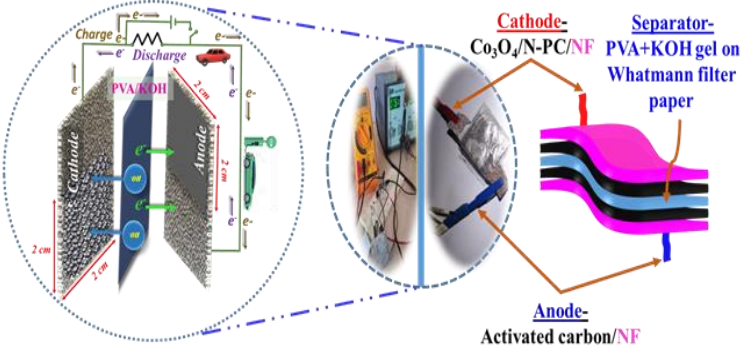
Experience:

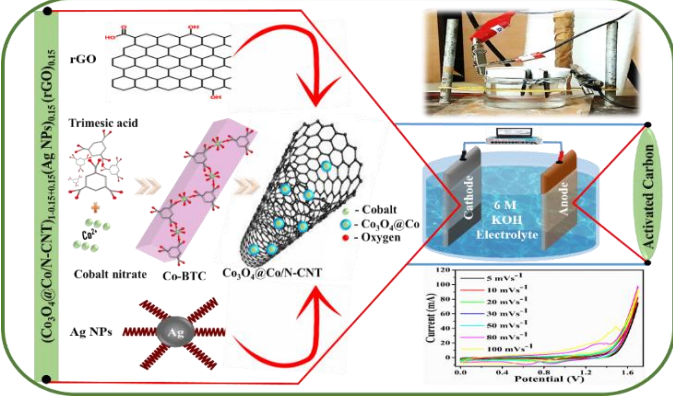
Title	Funding Agency	From	To
Project Fellow- “Designing of Metal oxide Nanocomposites as an Anti-bacterial Additives and their use in Paints Formulations”	Rajiv Gandhi Science and Technology Commission Govt. of Maharashtra	7-03-20	16-12-21
Senior Research Fellow- “Functional Nanocomposites of Metal Oxide-Carbon Nanostructure-Conducting Polymers for Supercapacitor Application”	Chhatrapati Shahu Maharaj Research, Training and Human Development Institute (SARTHI), Pune	8-08-2022	16-3-2024

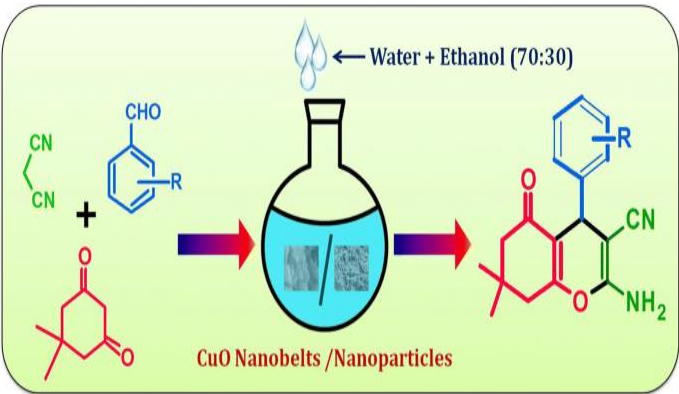
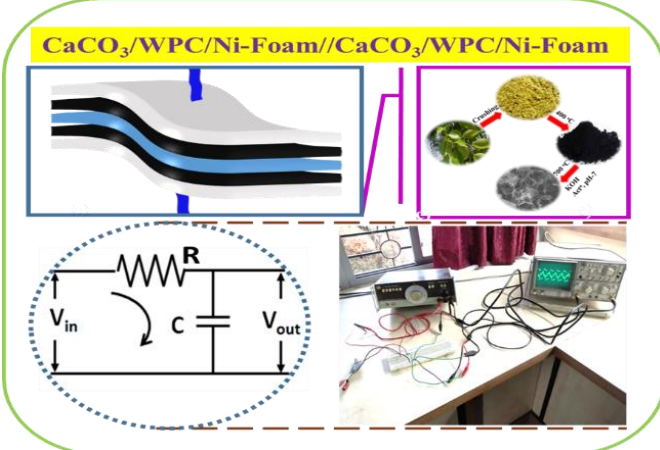
Research Activities:

❖ **List of Publications**

Publications	Published	Communicated	Under Construction
20	15	03	02

1.	<p>Synergistic Enhancement of Water Splitting Performance using MOF-derived Ceria Modified g-C₃N₄ Nanocomposites: Synthesis, Performance Evaluation, and Stability Prediction with Machine Learning Pramod A. Koyale, Swapnajit V. Mulik,and Sagar D. Delekar* <i>ACS Langmuir</i>. https://doi.org/10.1021/acs.langmuir.4c01336</p>
2.	<p>Optimized Fabrication of Supercapacitor Using MOF-Derived NiCo₂O₄ with Porous Carbon as Cathode: Electrochemical Characterization and Stability Analysis using Time Series Analysis Technique Swapnajit V. Mulik, Pramod A. Koyale, and Sagar D. Delekar* <i>ACS Appl. Electron. Mater.</i> https://doi.org/10.1021/acsaelm.4c00440</p> 
3.	<p>Cathode Material Designing and Characterization: Co₃O₄/N-doped Porous Carbon for Asymmetric Supercapacitors Swapnajit V. Mulik,, Tukaram D. Dongale, and Sagar D. Delekar* <i>Wiley, Chemistry Select</i>. DOI-10.1002/slct.202305096</p> 
4.	<p>Designing and Photovoltaic Studies of W@TiO₂/rGO Nanocomposites with Polymer Gel Electrolyte. Prakash S. Pawar,, Swapnajit V. Mulik,, and Sagar D. Delekar <i>RSC, New Journal of Chemistry</i>. DOI-10.1039/D3NJ04205G, 2024</p>

5.	ZnO Nanorod/Multiwalled Carbon Nanotube Composites Sensitized with Cu-Based Metal–Organic Frameworks as Photoanodes for Solar-Driven Water Splitting Pramod A. Koyale, ..., Swapnajit V. Mulik , and Sagar D. Delekar*. <i>ACS, Applied Nano Materials. DOI-10.1021/acsnm.3c04694, 2024</i>
6.	Square-Facet Nanobar MOF-Derived $\text{Co}_3\text{O}_4@\text{Co}/\text{N}$ -doped CNT Core–Shell-based Nanocomposites as Cathode Materials for High-Performance Supercapacitor Studies Swapnajit V. Mulik , Suprimkumar D. Dhas, and Sagar D. Delekar* <i>ACS Omega, DOI- 10.1021/acsomega.2c06369, 2023.</i> 
7.	Studies on the Magneto-Structural Properties and Initial Permittivity of Chemically Produced Nanoscale Nickel-Substituted Zinc Manganese Mixed Ferrites. Amol B. Phnadhare, Swapnajit V. Mulik , ..., Sagar D. Delekar, RajendraPatil* <i>Current Materials Science, DOI-10.2174/0126661454266022231207111038</i>
8.	Synthesis and Characterization of g-C ₃ N ₄ decorated ZnO Nanorods and their Binder Free Deposited Photoanodes for Photoelectrochemical Water Splitting Studies Pramod A. Koyale, Prakash S. Pawar, Swapnajit V. Mulik , ., and Sagar D. Delekar*. <i>Journal of Science and Technology, Shivaji University, Kolhapur, 2023</i>
9.	Third Generation Solar Cells: Importance and Measurements Techniques for knowing Photovoltaic Device Performances Prakash S. Pawar, ..., Swapnajit V. Mulik , Ankita K. Dhukate, Sagar D. Delekar*. <i>Journal of Science and Technology, Shivaji University, Kolhapur, 2023</i>
10.	A review on Current Advancements in Magnetic Nanomaterials for Magnetic Hyperthermia Applications Amol B. Pandhare, ..., Swapnajit V. Mulik , Pramod A. Koyale, and Sagar D. Delekar*. <i>Journal of Science and Technology, Shivaji University, Kolhapur, 2023</i>
11.	Transition Metal Oxide-Conducting Polymer and Transition Metal Oxide-Metal Organic Framework (MOF) based Materials for Supercapacitor Applications Swapnajit V. Mulik , Sushilkumar A. Jadhav, Pramod S. Patil, Sagar D. Delekar* <i>Metal Oxide series-Elsevier (Bookchapter), 2022</i>
12.	CuO Nanoparticles and Nanobelts Catalyzed Potent Synthesis of Benzopyran Derivatives Abhijeet Mulik*, Pravin Hegade, Swapnajit Mulik , Madhukar Deshmukh

	<p><i>Research on Chemical Intermediate, DOI - 10.1007/s11164-019-03925-x, 2019.</i></p> 
13.	<p>Efficient synthesis of 4H-chromene derivatives using Schiff base metal complex as catalyst Swapnajit V. Mulik, Sachin N. Abdar, ..., Pravin G. Hegade, Abhijeet G. Mulik* <i>International Journal of Research and Analytical Reviews (IJRAR), (2019)</i></p>
14.	<p>Synergistic Supercapacitor Design: Assessing NiCo₂O₄/Porous Carbon/Nickel Foam as Cathode with Optimised Anode and Aqueous Electrolyte Swapnajit V. Mulik,,Hyung-Ho Park, Sagar D. Delekar* <i>ACS, Applied Electronic Materials (under review)</i></p>
15.	<p>Utilizing Dalbergia sissoo Leaf Biomass for Enhanced Supercapacitor Electrodes: A Sustainable Approach towards High Performance Swapnajit V. Mulik,,Hyung-Ho Park, Sagar D. Delekar* <i>(under construction)</i></p> 

❖ **Patent Granted/Published/Filled**

Sr. No.	Title of the IP (patent, design, trademark/copyright/GI)	Name of the inventors	Date of application	IPR application No.
1.	A Method and Composition for Synthesizing Metal Oxides with Silver Nanoparticles and Reduced Graphene Oxides	S. D. Delekar, S. V. Mulik & A. K. Dhukate	24/03/2022	202221016775 (Indian)
2.	A System for Developing NiCo ₂ O ₄ /Porous Carbon (PC)/Nickel foam (NF) as	S. D. Delekar, & S. V. Mulik	11/01/2024	202024100119 (German)

	Cathode for Supercapacitor Devices			
3.	A Formulation of Chitosan Mediated Lithium Ferrite Nanomaterials For Magnetic Hyperthermia Study	S. D. Delekar, S. V. Mulik, A. B. Pandhare & R. P. Patil	25/03/2024	202024101011 (German)
4.	A Formulation for Superparamagnetic Iron-Oxide Nanoparticles for Magnetic Hyperthermia Treatment Application	S. D. Delekar, S. V. Mulik, A. B. Pandhare & R. P. Patil	22/03/2024	202024100973 (German)
5.	Composition and System for Synthesizing MnO ₂ -Anchored Ag/rGO Nanoparticles for Enhanced Dopamine Sensing. Swapnajit V. Mulik & Ankita K. Dhukate	S. D. Delekar, S. V. Mulik, & A. K. Dhukate	2024	(German)

Selected Conferences and Workshops Attended and Posters presented:

1. Square-Facets Nanobars MOF-derived Co₃O₄@Co/N-doped CNT Core-Shell based Nanocomposites as Cathode Materials for High Performance Supercapacitor Studies
Awarded by best project all India second position in basic science category in National Student Research Convention organized by Association of Indian Universities, New Delhi (ANVESHAN-2021-22).
2. High Performing Solid-State Asymmetric Supercapacitor Studies of Binder-Free Deposited Mesoporous Co₃O₄@Co/N-CNT as Cathode with Gel-Electrolyte
Presented paper in One Day International Conference On Advanced Materials and Applications" (ICAMA-2023) Organized by M. H. Shinde Mahavidyalaya, Tisangi
3. Square-Facets Nanobars MOF-derived Co₃O₄@Co/N-doped CNT Core-Shell based Nanocomposites as Cathode Materials for High Performance Supercapacitor Studies
Presented paper in Second International Conference on "Emerging Trends in Basic and Applied Sciences (ETBAS-2023) Organized by Karmaveer Hire Arts, Science, Commerce and Education College, Gargoti.
4. Actively Participated in Lokraja Startup & Innovation Program
Organized by Government of Maharashtra, between 18th April to 22nd May 2022.
5. Square-Facets Nanobars MOF-derived Co₃O₄@Co/N-doped CNT Core-Shell based Nanocomposites as Cathode Materials for High Performance Supercapacitor Studies
First prize in Aviskar Competition organized by Shivaji University, Kolhapur.
6. "Synthesis, Characterization of Metal Oxide based Nanocomposites for Energy Storage, Energy Conversion and Biomedical Applications"
Presented paper in Two days online International Conference "ICAST-2022" organized by Rajarshi Chhatrapati Shahu College, Kolhapur, 2022.

- CuO Nanoparticles and Nanobelts Catalyzed Potent Synthesis of Benzopyran Derivatives
Presented poster in 2nd International Twitter conference #NanoBio20 Organized by Department of Botany, Shivaji University, Kolhapur.

Technical Skills

- **Synthesis techniques**

- Nanomaterials
- Metal organic frameworks
- Polymer Synthesis

- **Equipments and Machinery handled**

- UV-Visible Spectrophotometer
- UV-DRS
- BioLogic France, Potentiostat

- **Computer proficiency**

- Operating systems Windows Vista, XP, Windows 7/8/8.1/10
- MS-Office 2003/2007/2010/2013
- Chemskech and Chemdraw
- Origin
- EC-Lab

Awards and Honors:

- Awarded by best project all India second position in basic science category in national student research convention organized by **Association of Indian Universities, New Delhi** (ANVESHAN-2021-22).
- First Prize in **Aviskar** competition organized by Shivaji University, Kolhapur.
- Chhatrapati Shahu Maharaj National Research Fellowship is awarded by SARTHI (Pune), Government of Maharashtra, India from 1st January 2022 onwards.

Extracurricular activities and achievements:

- Captain of intradepartmental cricket team (2023) department of chemistry, Shivaji University, Kolhapur.
- Participated in zonal matches of basketball representing Rayat Shikshan Sanstha's Balwant College, Vita, Sangli, MS, India.
- Active Member of NSS for two years (2014-2015).

Community Services

- Delivered guidance lecture for student participating in Maharashtra state intra-university aviskar competition.

I hereby declare that all the information given above is correct to the best of my

Knowledge.

REFERENCES:

Prof. Sagar D. Delekar

M.Sc., Ph.D., PDF-USA
Department of Chemistry,
Shivaji University, Kolhapur
416 004 (MS) India.
sdd_chem@unishivaji.ac.in

Prof. Prashant V. Anbhule

M.Sc., Ph.D
Department of Chemistry,
Shivaji University, Kolhapur
416 004 (MS) India.
pva_chem@unishivaji.ac.in

PERMANENT ADDRESS:

A/P- Revangaon.
Tal- Khanapur, Dist- Sangli
Maharashtra-415311, India.



Mr. Swapnajit Vijay Mulik