CURRICULUM VITAE

Academic and Work Experience

Dr. Sohan S. Thombare

Ph.D. Physics

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Address: Sunetra Coloney, Palace Road, Near, R. R. College, Plot No-23 Tahasil-Jath, District-Sangli Pin Code-416404

Date of Birth: 1st January 1992

Area of specialization

- **Ultracapacitor**
- **Li-Ion battery and capacitor**
- **Anodes form different husks**
- **Solvent extraction method**
- **Modified Hummers method**

Research Publications

I have published 2 research articles, 1 review article and 1 Indian patent is published. Also, my 2 research articles are under review process in quality international journals of material science.

Link of publications: https://scholar.google.com/citations?user=YIhQomEAAAAJ&hl=en

Link of Thesis on Shodhganga: http://hdl.handle.net/10603/553136

At Present		*Department of Medical Physics, Centre for Interdisciplinary, Research,* ***D. Y. Patil Education Society (Deemed To Be University), Kolhapur-416006, India.***
Current status		**Ph.D. completed (11th March 2024)**
Subject		**Ph.D. in Physics**
Title of the thesis And Affiliation		**Synthesis and characterization of silicon and carbon based anodes for lithium ion batteries.** *At Department of Medical Physics, Centre for Interdisciplinary, Research, D. Y. Patil Education Society (Deemed To Be University), Kolhapur 416 006, Maharashtra, India.*
Master of Science		**M.Sc. in Physics**
Affiliation		*At Department of Physics* Fergusson College, Pune, Savitribai Phule Pune University (SPPU), Pune 411 004 Maharashtra, India.
Grade		**Higher Second Class**
Bachelor of Science		**B.Sc. in Physics**
Affiliation		*At Department of Physics*, Raje Ramrao Mahavidyalaya, Jath, Shivaji University, Kolhapur (SUK), Kolhapur 411 004 Maharashtra, India.
Grade		**Second Class**

Research And Teaching Experience:

6 Years and 5 months

Future Research Interests:

- Li-Na-Al-Ion Batteries and Capacitors
- Green synthesis and develop anode and cathode materials in high-volume manufacturing.
- Electrochemical (HER and OER) and Photoelectrochemical water splitting
- Gas sensor, Bio-sensor, and Glucose sensing
- Roll-to-roll coating electrodes for cylindrical cell of Li-Na-Al-Ion Batteries **(In collaboration)**
- Drug delivery **(In collaboration)**
- Hyperthermia **(In collaboration)**
- Dye degradation **(In collaboration)**

References

Dr. Manisha R. Phadatare
(Ph. D. Supervisor)
Researcher, MSU, Sundsvall, Sweden
Email: Manisha.Phadatare@miun.se
Mobile No: +46 725818910

Prof. Chandrakant D. Lokhande
(Battery Supervisor)
Prof. Research Director and Dean, D. Y. Patil Education Society Kolhapur, Maharashtra, India
F.Inst (London), Humboldt (Germany), Brain Pool Fellow (South Korea), Former Head, Department of Physics, Former Director, International Affairs Cell, Shivaji University, Kolhapur, Maharashtra, India.
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Dr. Ramachndra S. Kalubarme
(Battery Supervisor)
Scientist, Centre for Materials for Electronics Technology (C-MET), Pune, (M.S.), India
Email: ramkalubarme@gmail.com
Mobile No: +91 9420916770

Dr. Bharat B. Kale
(Battery Supervisor)
Emeritus Scientist and Director of Material Science COE at MIT World Peace University, Pune, (M.S.), India
Email: bbkale1@gmail.com
Mobile No: +91 9423014560

Fellowship and Awards:

- Department of Natural Sciences, Mid Sweden University, Sundsvall, Sweden, for inviting to me to do research on supercapacitors with his research group in the Mid Sweden University, Sweden under the international collaboration project Green supercapacitors for renewable energy storage – An international collaboration between Mid Sweden University and D. Y. Patil Education Society (Deemed To Be University), India. Grant agency **"The Swedish Foundation for International Cooperation in Research and Higher Education-STINT". Swedish Energy Agency (project number: 39038-2),** the **EU Regional Fund**, the **KK Foundation** for research work.
- Project Assistant in the Research Project entitled **"Synthesis and characterization of Si-based nanomaterial for Lithium-ion calls"** Ref. No. **PU/ISRO-STC/2092 (Project No.196)** sponsored by **ISRO-SPPU Space Technology Cell, Pune, (M.S.) India.**

Published research articles:

- Synthesis and Characterization of Crystalline Cristobalite Alpha Low Silicon Dioxide Nanoparticles: A Cost-Effective Anode for Lithium-Ion Battery, **Sohan Thombare,** Rohan Patil, Ranjit Humane, Bharat Kale, Ram Kalubarme, Dhanaji Malavekar, Sambhaji Khot, Manisha Phadatare and Chandrakant Lokhande, **Journal of Materials Science: Materials in Electronics (JMSE)** (June 2024) 97(10):2927–2942. **(IF=2.8)**
  https://doi.org/10.1007/s12648-023-02647-6

- Exploring silicon nanoparticles and nanographite-based anodes for lithium ion batteries**, Sohan Thombare,** Rohan Patil, Ranjit Humane, Bharat Kale, Ram Kalubarme, Dhanaji Malavekar, Manisha Phadatare and Chandrakant Lokhande, **Journal of Materials Science: Materials in Electronics (JMSE) (June 2024)** 97(10):2927–2942. **(IF=2.8)**
  https://doi.org/10.1007/s12648-023-02647-6

- Effect of electrolytes on the performance of graphene oxide anode material for ultracapacitor, Li-ion capacitor, and Li-ion battery: three-in-one approach, **Sohan Thombare**, Rohan Patil, Dhanaji Malavekar, **Nicklas Blomquist**, **Håkan Olin**, Kishor Gavhane, **Jagruti Meshram**, Chandrakant Lokhande and Manisha Phadatare, Indian J Phys (September 2023) 97(10):2927–2942.
  https://doi.org/10.1007/s12648-023-02647-6

- *Oryza sativa* Husk as a sustainable source of silicon : A review, R. Lavate, **S. Thombare**, S. Soudagar, A. Bhosale, BIOINFOLET-A Quarterly Journal of Life Sciences, 2023, 20 (3b), 549.
- Water loving, water hating and water repellence properties of some plants, R. Lavate, S. Thombare, S. Soudagar, R. Sawant, A. Bhosale, BIOINFOLET-A Quarterly Journal of Life Sciences, 2023, 20 (3b), 561.
- Effect of annealing of agglomeration of primary particles with anatase phase and tetragonal structure of TiO_2 thin films using spray pyrolysis deposition, S. Thombare, A. Bhosale, S. Kokare and A. Yengantiwar, : AIP Conference Proceedings 2142, 080014 (2019) **https://doi.org/10.1063/1.5122442.**

Under Process Article

- Mitigating Pulverization and SEI Issues in High-Capacity Silicon Nanoparticle-Nanographite Electrodes for Better Power and Energy Density in Rechargeable Lithium-Ion Energy Storage Devices **(Submitted)**

- Porous Spherical Cluster Silicon Nanoparticles-Based Anode for Superior Energy and Power Density in Rechargeable Lithium-Ion CR2032 Button Cell Devices **(Submitted)**

Patent:

1. Crystalline cristobalite alpha low silicon dioxide anodes for lithium-ion batteries and lithium-ion capacitor for future zero emission electric cars. Dr. Manisha R. Phadatare, Prof. Chandrakant D. Lokhande, **Mr. Sohan S. Thombare,** and Mr. Rohan A. Patil, **Application No: 202221061157**, **Status: Published.**
2. Porous Spherical Cluster Silicon Nanoparticles Based Anode For Enhanced Energy And Power Density In LithiumIon Energy Storage Device.
   Dr. Sohan Shrimant Thombare, Mr. Kaustubh Murlidhar Gawade, Prof. Suresh Sopanrao Patil, Prof. Chandrkant Dnyandev Lokhande, Dr. Manisha Ramachandra Phadatare, Mr. Rohan Anand Patil, Dr. Ramchandra Sukhadeo Kalubarme, Dr. Bharat Bhanudas Kale, Dr. Harsharaj Sayaji Jadhav, Dr. Makarand Manohar Patil, Dr. Dhanaji Balasao Malavekar, Dr.Sachin Shivaji Pujari, **Application No: 202421073135, Status: Published.**
3. Capacitive and Diffusion Contributions In Porous Spherical Cluster Silicon Nanoparticles-Nanographite Composite Anode for Enhanced Power and Energy Density In Lithium-Ion Energy Storage Devices.
   Dr. Sohan Shrimant Thombare, Mr. Kaustubh Murlidhar Gawade, Prof. Suresh Sopanrao Patil, Prof. Chandrkant Dnyandev Lokhande, Dr. Manisha Ramachandra Phadatare, Mr. Rohan Anand Patil, Dr. Ramchandra Sukhadeo Kalubarme, Dr. Bharat Bhanudas Kale, Dr. Harsharaj Sayaji Jadhav, Dr. Makarand Manohar Patil, Dr. Dhanaji Balasao Malavekar, Dr.Sachin Shivaji Pujari, **Application No: 202421073124, Status: Published.**

Conference/Seminar/Workshop Participation & Presentations: (03)

1. Sohan S. Thombare, Chandrakant D. Lokhande, Manisha R. Phadatare, Synthesis and Characterization of Crystalline Cristobalite Alpha Low Silicon Dioxide Nanoparticles Derived from Oryza sativa husk, 4th ICPM-MDF-2019, Shivaji University, Kolhapur.

2. Sohan S. Thombare, Chandrakant D. Lokhande, Manisha R. Phadatare, Synthesis and characterization of graphene oxide sheets by using Improved Hummers Method, 4th ICAMS-2020, Raje Ramrao Mahavidyalaya, (Jath), Sangli.

3. Sohan S. Thombare, Chandrakant D. Lokhande, Manisha R. Phadatare, Synthesis and characterization of Silica Nanoparticles Derived from Rice Husk and Bamboo Leaves, 5th ICAMS-2020, Raje Ramrao Mahavidyalaya, (Jath), Sangli.

Research Experience and Handling Techniques:

1. Glow box for battery fabrication
2. Drop casting method
3. Spray pyrolysis technique
4. Doctor Blade technique
5. Various physico-chemical methods

DECLARATION:

I do hereby declare that the particulars of information and facts stated herein above are true, correct, and complete to the best of my knowledge and belief.

Date: 20/01/2025

Place: Jath **Dr. Sohan S. Thombare**