

Curriculum Vitae

Dr. Santosh Jagdeo Uke

(MSc. Physics, PhD. NET)

Assistant Professor

Department of Physics

J. D. Patil Sangludkar Mahavidyalaya,

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(University Grant Commission, Gov.

India Granted College)

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Research Objective:

- ✓ To contribute at least in some way towards the development of the *Science* is the prime goal of my research.
- ✓ With the special interest in the development of new energy conversion and storage concept with the area of the material for Ultracapacitor, micro supercapacitor and Fuel cell.

Title of the thesis:

- ✓ “Study of Co and Mn oxide nanocomposites for their application in supercapacitor”

Educational qualification:

- ✓ **Ph.D.** **2014-18**
Sant Gadge Baba Amravati University, Amravati, Maharashtra, India
Place of work: Department of Physics, Shri Shivaji Science College, Amravati, Maharashtra, India
Research Supervisor: Dr. V. P. Akhare
- ✓ **M.Sc.** **2008-10**, First class, First merit (Gold medal)
Department of Physics,
Sant. Gadge Baba Amravati University, Amravati, Maharashtra, India
- ✓ **B.Sc.** **2005-2008**, First Class
Subjects: Physics, Chemistry and Mathematics
J. D. Patil Sangludkar Mahavidyalaya, Drayapur,
Dist- Amravati (MS) 444803

Awards and Honors:

- ✓ First merit in M. Sc. Physics 2010 at Sant Gadge Baba Amravati University, Amravati Maharashtra, India
- ✓ Gold medal in M. Sc. Physics 2010 at Sant Gadge Baba Amravati University, Amravati Maharashtra, India
- ✓ Acquire All India Rank 007 Lectureship in UGC-CSIR National Eligibility Test (NET)-2010
- ✓ First consolation prize for the poster presentation at National seminar on Nanotechnology: Today and Tomorrow held at Janakidevi Bajaj Science College, Wardha, on date 28th Feb **2015**.

Research Training attended:

- ✓ “Hands on training on nanofabrication technology and Material characterization” at Centre for Nano Science and Engineering (CeNSE), Indian Institute of Science (IISc.), Bangalore, India, during 12-22 Sep 2017, Under Indian Nanoscience User Programme (INUP), Government of India.
- ✓ “Pedagogy workshop” at Shri Shivaji Science college, Amravati from 26 to 28th June 2018

Research experience:

- ✓ Total research experience: 03 years (after PhD award)
- ✓ Expertise in sol-gel synthesis nanostructure material.
- ✓ Expertise in surfactant assisted hydrothermal synthesis of hierarchical nanostructure material.
- ✓ Expertise in structural and morphological characterization of material by different analytical tools.
- ✓ Well versed with electrochemical investigation of electrode material such as cyclic voltammetry, Galvonostatic charge discharge, Electrochemical Impedance Spectroscopy, etc.
- ✓ Expertise in fabrication of electrode and its use in supercapacitor.

Academic Experience:

- ✓ Worked as Assistant professor in Physics from 22/6/2011 to 31/3/2012 at S. P.D. M. College, Shirpur, Dist – Dhule, Maharashtra, India

- ✓ Working as Assistant professor in Physics from 2012 at J. D. Patil Sangludkar Mahavidyalaya, Drayapur, Dist- Amravati, Maharashtra, India to present
- ✓ Working as reviewer in Journal of Electroanalytical Chemistry, Elsevier
- ✓ Worked as internal as well as external practical examiner for S.G. B Amravati University practical examination
- ✓ From 2018 working as college coordinator of Unnat Bharat Abhiyan (UBA, Gov. of India), under which implementing science and technology projects at five selected villages.
- ✓ From 2014 working as Associate NCC officer at 8 Maharashtra Battalion NCC, Amravati

Research Project Completed:

- ✓ A minor research project (MRP) Fill No. 47-763/13 (WRO) funded by University Grant Commission (UGC), New Delhi, India is completed
Topic of Project: “**Synthesis and characterization of Ni and Mn doped MgFe₂O₄ metal oxide used for supercapacitor application**”
- ✓ Monitoring as project guide for B.Sc. (Semester-III, IV, V and VI) students as project guide for their graduate level research projects. (Since 2011)

List of Publications:

1. Nandkishor D. Gawhale, Mahendra N. Lokhande, **Santosh J. Uke**, Satish P. Mardikar, Vikram U. Pandit, Manisha M. Kodape, “An Expedient Synthesis Of 3,4-Dihydropyrimidin-2(1h)-Ones Derivatives Under Solvent Free Condition Using Titanium Dioxide As A Catalyst”, **2021**, Materials Today: Proceedings (Accepted for publications).
2. Gautam S. Duthade, Uday D. Joshi, Manisha M. Kodape, Satish P. Mardikar, **Santosh J Uke**, Vikram Pnedit, Mahendra N. Lokhande, “Synthesis, X-ray diffraction, physical, thermal behavior and chemical studies of Fe/Zn/Cu-NaX zeolite”, **2021**, Materials Today: Proceedings (Accepted for publications).
3. Ritu Bansal, Sanjay Kumar Mishra, Yogesh Kumar, **Santosh J. Uke**, Satish P. Mardikar Vikram U. Pandit, “Investigation For Conductor Loss Calculation Including Effect Of Adhesive Layer of Titanium in Millimetre and Microwave Range”, **2021**, Materials Today: Proceedings (Accepted for publications).
4. Narbir Singh, Kamalika Banerjee, , Meenal Gupta, Y. K. Bainsla, Vikram U. Pandit, Pankaj Singh, **Santosh J. Uke**, Ashwani Kumar, , Satish P. Mardikar, ,Yogesh Kumar, “Concentration Dependent Electrochemical Performance Of Aqueous Choline Chloride Electrolyte” **2021**, Materials Today: Proceedings (Accepted for publications).
5. Narbir Singh, Kamalika Banerjee, Y. K. Bainsla, Manoj K. Singh, Meenal Gupta, Ashwani Kumar, Pankaj Singh, **Santosh J. Uke**, Satish P. Mardikar, Vikram U. Pandit, Yogesh Kumar, “Preparation of Electrochemically Stable Choline Chloride-Sugar Based

Sustainable Electrolytes And Study of Effect of Water on Their Electrochemical Behaviour”, **2021**, Materials Today: Proceedings (Accepted for publications).

6. **Uke, Santosh J.**, Satish P. Mardikar, Ashwani Kumar, Yogesh Kumar, Meenal Gupta, and Yogesh Kumar. "A review of π -conjugated polymer-based nanocomposites for metal-ion batteries and supercapacitors." Royal Society Open Science 8, no. 10 (2021): 210567.
7. Mardikar, Satish P., Sagar D. Balgude, and **Santosh J. Uke**. "Supercapacitor Supported by Nickel, Cobalt and Conducting Polymer Based Materials: Design Techniques and Current Advancement." In Supercapacitors. IntechOpen, 2021.
8. Kumar, Y., Gupta, A., Thakur, A. K., **Uke, S. J.**, Khatri, V., Kumar, A., & Gupta, M. (2021). Advancement and current scenario of engineering and design in transparent supercapacitors: electrodes and electrolyte. Journal of Nanoparticle Research, 23(5), 1-15. (IF=2.359)
9. Kumar, Y., **S. J. Uke**, Ashwani Kumar, S. P. Mardikar, Meenal Gupta, A. K. Thakur, Patrizia Bocchetta, A. Gupta, Vinay Kumar, and Yogesh Kumar. "Triethanolamine–ethoxylate (TEA-EO) assisted hydrothermal synthesis of hierarchical β -MnO₂nanorods: Effect of surface morphology on capacitive performance." Nano Express (2021).
10. "Tri-Ethanolamine-Ethoxylate assisted hydrothermal synthesis of nanostructured MnCo₂O₄ with superior electrochemical performance for high energy density supercapacitor application." **Uke, Santosh J.**, Gajanan N. Chaudhari, Yogesh Kumar, and Satish P. Mardikar. Materials Today: Proceedings 43 (2021): 2792-2799.
11. Low temperature synthesis of MnO₂ nanostructures for supercapacitor application. Materials Science for Energy Technologies. Kumar, Y., Chopra, S., Gupta, A., Kumar, Y., **Uke, S.J.** and Mardikar, S.P., Materials Science for Energy Technologies 3 (2020) 566–574, <https://doi.org/10.1016/j.mset.2020.06.002>
12. Enhanced electrochemical property of Ag doped manganese oxide electrode synthesized by hydrothermal route, Yogesh Kumar, **S. J. Uke**, Seema Chopra, Anshu Gupta, Sanjeev Kumar, Y. Kumar, Infokara Research, Volume 9, Issue 3, 2020. ISSN 1021-9056,
13. Sol-gel citrate synthesized Zn doped MgFe₂O₄ nanocrystals: A promising supercapacitor electrode material, **Uke S.J.**, Mardikar, S. P, Bamboled D. R., Yogesh Kumar, Chaudhari G. N. , Materials Science for Energy Technologies 3 (2020) 446–455 <https://doi.org/10.1016/j.mset.2020.02.009>
14. Morphology dependant electrochemical performance of hydrothermally synthesized NiCo₂O₄ nanomorphs. **Uke, S. J.**, Chaudhari, G. N., Bodade, A. B., & Mardikar, S. P. (2020). Materials Science for Energy Technologies, 3, 289-298. <https://doi.org/10.1016/j.mset.2019.11.004>
15. “PEG Assisted Hydrothermal Fabrication of Undoped and Cr Doped NiCo₂O₄ Nanorods and Their Electrochemical Performance for Supercapacitor Application”. **Uke, S. J.**, Akhare, V. P., Meshram-Mardikar, S. P., Bodade, A. B., & Chaudhari, G. N. (2019). Advanced Science, Engineering and Medicine, 11(5), 357-366. <https://doi.org/10.1166/ asem.2019.2367>
16. “Triethanol Amine Ethoxylate (TEA-EO) Driven Controlled Synthesis of NiCo₂O₄

- Nanostructures, Their Characterization and Supercapacitor Performance”, (2018) **Uke, S. J.**, Akhare, V. P., Meshram, S. P., & Chaudhari, G. N. *Advanced Science, Engineering and Medicine*, 10(12), 1174-1182. <https://doi.org/10.1166/ asem.2018.2290>
17. “Fabrication of Spherical Nanocrystalline MnCo_2O_4 Via Sol- Gel Citrate Route For Supercapacitor Application” **Uke S. J.**, Akhare V. P., Meshram S. P., Bambole, D. R., Thakre D.S., & Chaudhari, G. N. (2018).. *International Journal of Science and Research (IJSR)*, 5(1), 254-561.
 18. “Recent Advancements in the Cobalt Oxides, Manganese Oxides, and Their Composite As an electrode Material for Supercapacitor: A Review.” **Uke, S. J.**, Akhare, V. P., Bambole, D. R., Bodade, A. B., & Chaudhari, G. N. (2017). *Frontiers*, 4(21), 1., <https://doi.org/10.3389/fmats.2017.00021>,
 19. “Cost effective synthesis of spinel NiCo_2O_4 nanocrystal by sol-gel citrate method and its application for supercapacitor”. **Uke, S. J.**, Akhare, V. P., Bambole, D. R., Bodade, A. B., Chaudhari, G. N., *International Journal of Materials Science* ISSN 0973-4589 Volume 12, Number 2 (2017), pp. 371-377, , <http://www.ripublication.com>
 20. “Electrical and cyclic voltammetric study of MgFe_2O_4 nanocomposit prepared by sol- gel method” G. N. Chaudhari, V. P. Akhare, A. B. Bodade, **S. J. Uke**, D. R. Bmbole, *published in Conference proceeding of National Conference in Frontier Areas in Chemistry*, held at Shri. Shivaji Science College, Amravati, 22-23 Oct.,2013

Conferences and presentations:

1. **Title of Paper:** “Tri-ethanolamine-ethoxylate assisted hydrothermal synthesis of nanostructured MnCo_2O_4 with superior electrochemical performance for high energy density supercapacitor application” in 12th International Symposium on Advances in Electrochemical Science and Technology at Chennai which was jointly organized by SAEST, Chennai and CSIR-Central Electrochemical Research Institute (CSIR-CECRI) Karaikudi, Tamil Nadu, India, during 7-10 January 2019.
2. **Title of Paper** “Controlled Hydrothermal synthesis of NiCo_2O_4 for supercapacitor application” Presented research paper in International Conference on Energy and Environment organized by, Department of Chemical Engineering, BRACT's Vishwakarma Institute Of Technology (V.I.T), Pune, during 4 -5 January 2019.
3. **Title of Paper:** “PEG-600 assisted hydrothermal synthesis of NiCo_2O_4 as an electrode material for supercapacitor application” Presented research paper in the International Meeting on Energy Storage Devices organized by Indian Institute of Technology Roorkee, Uttarakhand, during 8-10 Dec. 2018
4. **Title of paper:** “Fabrication of Spherical Nanocrystalline MnCo_2O_4 Via Sol-Gel Citrate Route for Supercapacitor Application’ presented at National Conference On Recent Trends In Synthesis And Characterization of Frontiers Material In Science For The Development Of Society” held during on 13th January 2018. At Late. Bhaskarrao Shingne Arts, Narayanrao gawande Science and Ashalayta Gawande Commerce College, Sakharkherda, Dist- Buldhana, (M.S.)
5. **Title of poster:** “Cost effective synthesis of spinel NiCo_2O_4 nanocrystals by sol-gel citrate method and its application for supercapacitor” presented at International conference ICRBAM at CMET Pune on 1-8th March 2017.
6. **Title of paper:** “Recent advancements in the cobalt oxides, manganese oxides and their composite as an electrode material for supercapacitor: a review” presented at International Conference on Nano For Energy And Water (New) & Indo-French Workshop On Water Networking February 22nd-24th, 2017 at Dehradun, Uttarakhand India.
7. **Title of poster:-** “Impedance spectroscopic and cyclic voltammetric study of MgFe_2O_4 nanocomposite prepared by sol- gel method” presented at UGC-DBT-DST Sponsor National seminar on ‘Nanotechnology: Today and Tomorrow’ held at Jankidevi Bajaj Science College, Wardha, Maharashtra. On date 28th Feb 2015.

As resource person and invited talk delivered :

- 1) Delivered invited talk in 6th Shivaji Vidhyan Parishad organized by Homi Bhabha Science Centre, Tata Institute of Fundamental Research (T.I.F.R.), Mumbai and Shivaji Education Society 2018 held at Shivaji College, Amravati during 24th -26th December 2018.
- 2) Delivered invited talk on topic “Nanostructured Materials for Energy Storage” in online Certificate Course on “Introduction To Nanotechnology” from 19th-26th July 2021 The Department of Chemistry, Smt. Radhabai Sarda Arts, Commerce and Science College, Anjanaon Surji.

3) Delivered invited talk on “Binary Transition Metal Oxides as Promising Electrode Material for Renewable Energy (Green Energy) and Sustainable Development ” in One-week online Faculty development Program on "Recent Trends in Green Technology and Materials" from 20th -24th December, 2021 organized by Department of Chemical Engineering, Sinhgad College of Engineering, Pune.

Personal detail:

- Date of Birth: 20.07.1986
- Marital Status: Married
- Sex: Male
- Language Known: English, Hindi, Marathi

