

FACULTY PROFILE



1. **Name of the teacher** Dr. Korade Sumit Dilip
2. **Designation** Assistant Professor
3. **Department** Physics
4. **Teaching Experience** 1 Year
5. **Date of birth** 26 August 1990
6. **Category** OBC
7. **Subject taught** Solid State Physics, Thermodynamics and Classical Mechanics
8. **Date of appointment** 1st January 2024
9. **Date of joining** 2nd January 2024
10. **Date of approval**
12. **Educational Qualifications** M. Sc., Ph.D.

Sr. No.	Qualifications	Year of passing	University	Percentage of marks	Grade obtained
1.	B. Sc.	2011	Shivaji University	60.63	First class
2.	M. Sc.	2014	Shivaji University	57.12	Second class
3.	Ph. D.	2023	Shivaji University		

I. Office:	Department of Physics, Kisan Veer Mahavidyalaya Wai. Tal- Wai, Dist. Satara. Pin-412803
II. Residence:	At Post Shahabag, Tal- Wai, Dist-Satara Pin- 412803
Title of the Ph.D. Thesis:	Studies on metal cations (Ag, Cd and In) incorporated CZTSSe absorber layers deposited by magnetron sputtering for solid state solar cells

Fellowship

UGC project fellow (2016-2018)

Worked as project fellow under UGC, New Delhi has sanctioned Major Research Project entitled “Deposition of $\text{Cu}_2\text{ZnSn}(\text{SSe})_4$ Thin films by a novel spray-CVD method and fabrication of efficient solar cells”

Exchange Student (2019-2021)

Visited Chonnam National University, South Korea under exchange student Program.

Skills

Software's:

Origin, Microsoft Office, Mendeley, X'Pert High Score plus, Adobe Illustrator

Synthesis Techniques:

Spray Pyrolysis technique, Reflux, Chemical Bath Deposition (CBD), Hydrothermal, Spray - Chemical Vapor Deposition (S-CVD), Chemical Vapor Deposition (CVD), Hot injection method, DC magnetron sputtering, etc.

Characterization Techniques:

X-ray diffraction (XRD) analysis (Bruker AXS Analytical Instruments Pvt. Ltd., Germany, Model: D2 phaser) Scanning Electron Microscope (SEM) analysis (Model: JEOL JSM-6360, Japan) Contact Angle (Model No.-HO-IAD-CAM-01B, Holmark, India)

Research Publications

- 1. Korade SD**, Gour KS, Karade VC, Jang JS, Muhammad R, Patil SS, Bhat TS, Patil AP, Yun JH, Park JS, Kim JH, Patil PS Improving the Device Performance of CZTSSe Thin-Film Solar Cells via Indium Doping. ACS Applied Materials & Interfaces. 2023, Vol 15 issue 49 Pages 57183-57191
- Gour KS, Karade V, Jang JS, Jo E, Babar P, **Korade S**, Yoo H, Kim S, Kim D, Park J, Kim JH. Nanoscale rear-interface passivation in $\text{Cu}_2\text{ZnSn}(\text{S,Se})_4$ solar cells through the CuAlO_2 intermediate layer. ACS Applied Energy Materials. 2021 Apr 25;4(5):5222-9.

3. Patil, K., Babar, P., Lee, D.M., Karade, V., Jo, E., **Korade, S.** and Kim, J.H., 2020. Bifunctional catalytic activity of Ni–Co layered double hydroxide for the electrooxidation of water and methanol. *Sustainable Energy & Fuels*, 4(10), pp.5254-5263.
4. Bhat, T.S., Mali, S.S., **Korade, S.D.**, Shaikh, J.S., Karanjkar, M.M, Hong, C.K., Kim, J.H. Patil, P.S., Mesoporous architecture of TiO₂ microspheres via controlled template assisted route and their photoelectrochemical properties, 28, 2017, 304.
5. Bhat, T.S., Mali, S.S., Sheikh, A.D., Tarwal, N.L., **Korade, S.D.**, Hong, C.K., Kim, J.H. Patil, P.S., ZnS passivated PbSe sensitized TiO₂ nanorod arrays to suppress photocorrosion in Photoelectrochemical solar cells, 16, 2017, 186.
6. T.S. Bhat, S.S. Mali, A.D. Sheikh, **S.D. Korade**, K.K. Pawar, C.K. Hong, J.H. Kim, P.S. Patil, TiO₂/PbS/ZnS heterostructure for panchromatic quantum dot sensitized solar cells synthesized by wet chemical route, *Optical Materials*, 73, 2017, 781.
7. Patil, S.S., Tarwal, N.L., Yadav, H.M., **Korade, S.D.**, Bhat, T.S., Teli, A.M., Karanjkar, M.M., Kim, J.H. Patil, P.S., Photoelectrochemical performance of dye and semiconductor sensitization on 1-D hollow hexagonal ZnO rods: A comparative study, 22, 2018, 3015.

Conference/Workshop

1. International Conference on Materials Science and Ionizing Radiation Safety & Awareness (ICMSIRSA- 2016) held at Shivaji University, Kolhapur on 28-30 Jan 2016.
2. Familiarization workshop on patent and IPR held at Government of Maharashtra's Rajaram College, Kolhapur, 8 February 2017.
3. A workshop on Solutions from synthesis to characterization held at School of Nanoscience and technology, SUK on 26 March 2018.
4. Attended GIAN course on Basic principle and applications on photo-voltaic devices at IIT Indore. The course duration was 10/12/2018 to 20/12/2018.
5. Attended GIAN course on Novel functional materials for energy conversion at NIT Surathkal in 2016.