

CURRICULUM VITAE



Dr. Chaitali Siddheshwar Bagade

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Languages Known: English, Hindi, Marathi

Educational Qualifications:

Sr. No.	Exam	Board/University	Year of Passing	Subjects	Percentage	Class Obtained
1	SET	Maharashtra Government	2023	Chemical Science	NA	-
2	Post-Doctoral	Georgetown University, Washington DC, USA	2017	Material Sciences	NA	-
3	Ph. D.	Shivaji University, Kolhapur	2017	Material Sciences	-	Awarded
4	M. Sc.	Shivaji University, Kolhapur	2013	Applied Chemistry	75.00	1st Class with Distinction
5	B. Sc.	Shivaji University, Kolhapur	2011	Chemistry	76.76	1st Class with Distinction
6	H. S. C.	Pune Board	2008	PCB	62.00	1st Class
7	S. S. C.	Pune Board	2006	Compulsory Subjects	70.13	1st Class with Distinction

RESEARCH WORK

Title of M. Sc. Project Research Work

BRONSTED ACID IONIC LIQUIDS FOR CONVERSION OF FURFURYL ALCOHOL TO LEVULINIC ACID ESTERS

Supervisor: Dr. C. V. Rode, National Chemical Laboratory, Pune

Title of Ph. D. Research Work

STUDIES ON SYNTHESIS, PROPERTIES AND APPLICATIONS OF QUATERNARY, MULTINARY NANOCRYSTALLINE METAL CHALCOGENIDE THIN FILMS

Supervisor: Prof. (Dr.) P. N. Bhosale, Shivaji University, Kolhapur

Title of Post-Doctoral Research Work

FORMATION OF ORGANIC AND INORGANIC NANOPARTICLES AND THEIR APPLICATION TO ELECTRONIC AND OPTICAL DEVICES

Supervisor: Prof. Edward Van Keuren, Georgetown University, Washington DC, USA

TEACHING EXPERIENCE

Sr. No.	Post	Institute/Department	Period
1	Assistant Professor (Consolidate)	Department of Applied Chemistry, Shivaji University, Kolhapur	10th July 2013 to 7th May 2014
2	Assistant Professor (Consolidate)	Department of Industrial Chemistry, Shivaji University, Kolhapur	16th August 2017 to 24th May 2018
3	Assistant Professor (Consolidate)	Department of Agrochemicals and Pest Management, Shivaji University, Kolhapur	21st July 2018 to 3rd July 2023
4	Assistant Professor (Consolidate)	Department of Applied Chemistry, Shivaji University, Kolhapur	27th July 2023 to till date

PATENTS

1. **UK Patent:** Apparatus for chemical deposition of nanostructured thin film solar cell Design. **Number:** 6384296 **Grant Date:** 23rd August 2024
2. **German Patent:** A system for synthesizing Gel-ZnO nanorods (Gel-ZnO NRs) for degradation of methylene blue. **Utility Patent Number:** 202024107641.9 **Grant Date:** 31st December 2024

HONOURS AND AWARDS

- **2019:** Best Paper Presentation Award by International Conference on Chemistry, Energy and Environment (ICCEE 2019), Yashwantrao Chavan Institute of Science, Satara.
- **2016:** Selection for Short-Term Internship in Georgetown University, Washington DC through DST-New Delhi, Under INSPIRE Fellowship Programme.
- **2014:** Best Paper Presentation Award by Third International Conference on Polymer Processing and Characterization (ICPPC 2014), Mahatma Gandhi University, Kottayam, Kerala, 11th to 13th October 2014.
- **2014:** DST-INSPIRE Fellowship Award.
- **2013:** First Rank Holder in Shivaji University.

TECHNICAL SKILLS

- Perkin Elmer IR Spectrophotometer
- Hitachi UV-Vis-NIR Spectrophotometer
- MS-CIT
- Scanning Electron Microscopy
- Sputtering
- Lithography
- X-ray Diffractometer

PERSONAL SKILLS

- Good Communication Skill and Leadership Qualities
- Good Analytical and Logical Approach
- Good Teamwork and Time Management
- Good in Decision Making and Human Relation
- Willingness to Learn

PUBLICATIONS IN NATIONAL AND INTERNATIONAL JOURNALS

1. **Bagade, C. S.**; Mali, S. S.; Ghanwat, V. B.; Khot, K. V.; Patil, P. B.; Kharade, S. D.; Mane, R. M.; Desai, N. D.; Hong, C. K.; Patil, P. S.; Bhosale, P. N. A facile and low cost strategy to synthesize $\text{Cd}_{1-x}\text{Zn}_x\text{Se}$ thin films for photoelectrochemical performance: effect of zinc content. *RSC Advances* 2015, 5 (69), 55658–55668. <https://doi.org/10.1039/c5ra08791k>
2. Melis, S.; Hung, S.; **Chaitali Bagade**; Chung, Y.; Hughes, E.; Zhang, X.; Barbara, P.; Han, P.; Li, T.; McCusker, D.; Hartsmith, R.; Bertke, J.; Dev, P.; Stone, I.; Joshi, J.; Vora, P.; Keuren, E. V. Charge Transport through Superexchange in Phenothiazine–7,7,8,8-Tetracyanoquinodimethane (PTZ–TCNQ) Cocrystal Microribbon FETs Grown Using Evaporative Alignment. *ACS Applied Electronic Materials* 2022, 4 (12), 5973–5983. <https://doi.org/10.1021/acsaelm.2c01160>
3. **Bagade, C. S.**; Ghanwat, V. B.; Khot, K. V.; Bhosale, P. N. Efficient Improvement of Photoelectrochemical Performance of CdSe Thin Film Deposited via Arrested Precipitation Technique. *Materials Letters* 2015, 164, 52–55. <https://doi.org/10.1016/j.matlet.2015.10.09>
4. **Bagade, C. S.**; Ghanwat, V. B.; Mali, S. S.; Khot, K. V.; Hong, C. K.; Bhosale, P. N. Synthesis of (CdZn)Se Thin Films by a Facile Aqueous Phase Route and Their Photoelectrochemical Performance for Solar Cell Application. *Journal of Materials Science: Materials in Electronics* 2016, 27 (6), 5867–5877. <https://doi.org/10.1007/s10854-016-4504-7>
5. **Bagade, C. S.**; Bhosale, P. N. Multinary $\text{CdZnIn}_2(\text{SeTe})_5$ Thin Films Produced by Arrested Precipitation Technique for Photoelectrochemical Solar Cells. *Journal of Alloys and Compounds* 2019, 787, 379–389. <https://doi.org/10.1016/j.jallcom.2019.01.258>
6. **Bagade, C. S.**; Ghanwat, V. B.; Van Keuren, E.; Bhosale, P. N. A Robust and Self-Assembled Route to Synthesis of $\text{CdZn}(\text{Se}_{1-x}\text{Te}_x)_2$ Photoanodes as Light Harvesters for Photoelectrochemical Solar Cells. *Journal of Materials Science: Materials in Electronics* 2018, 29 (14), 11763–11773. <https://doi.org/10.1007/s10854-018-9275-x>
7. **Bagade, C. S.**; Ghanwat, V. B.; Kharade, S. D.; Khot, K. V.; Kharade, R. R.; Desai, N. D.; Bhosale, P. N. Rapid Formation of Ternary CdZnSe_2 Chalcogenide Thin Film by Microwave Assisted Chemical Bath Deposition. *Macromolecular Symposia* 2016, 362 (1), 60–64. <https://doi.org/10.1002/masy.201400252>
8. Li, T.; Melis, S.; **Chaitali Bagade**; Khatib, A.; Kosarzycki, R.; Maglieri, G.; Zhang, X.; Keuren, E. V. Mechanisms of Nucleation and Growth in

- the Formation of Charge Transfer Nanocrystals. *Journal of Nanoparticle Research* 2019, 21 (7). <https://doi.org/10.1007/s11051-019-4593-3>
9. Attar, S. R.; Sapkal, A. C.; **Bagade, C. S.**; Ghanwat, V. B.; Kamble, S. B. Biogenic CuO NPs for Synthesis of Coumarin Derivatives in Hydrotropic Aqueous Medium. *Research on Chemical Intermediates* 2023, 49 (7), 2989–3004. <https://doi.org/10.1007/s11164-023-05034-2>
 10. Attar, S. R.; Sapkal, A. C.; **Bagade, C. S.**; Mujawar, S. H.; Kamble, S. B. Gel Entrapped ZnO Nanorods: An Efficient and Sustainable Catalyst for the Claisen-Schmidt Condensation Reaction in Aqueous Hydrotropic Media. *Molecular Catalysis* 2023, 542, 113120. <https://doi.org/10.1016/j.mcat.2023.113120>
 11. Patil, S.; Pandit, N.; Kadam, A.; Attar, S.; **Chaitali Bagade**; Pore, D.; Kamble, S. A Novel Nanocatalyst Praseodymium Oxide (Pr₆O₁₁) for the Efficient and Sustainable Synthesis of Chromene Derivatives Via Ultrasound Irradiation in an Aqueous Hydrotropic Medium. *RSC Advances* 2025, 15 (32), 25985–25999. <https://doi.org/10.1039/d5ra03100a>
 12. Khot, K. V.; Ghanwat, V. B.; **Bagade, C. S.**; Mali, S. S.; Bhosale, R. R.; Bagali, A. S.; Dongale, T. D.; Bhosale, P. N. Synthesis of SnS₂ Thin Film via Non Vacuum Arrested Precipitation Technique for Solar Cell Application. *Materials Letters* 2016, 180, 23–26. <https://doi.org/10.1016/j.matlet.2016.05.089>
 13. Ghanwat, V. B.; Mali, S. S.; **Bagade, C. S.**; Mane, R. M.; Hong, C. K.; Bhosale, P. N. Thermoelectric Properties of Indium(III)-Doped Copper Antimony Selenide Thin Films Deposited Using a Microwave-Assisted Technique. *Energy Technology* 2016, 4 (7), 835–842. <https://doi.org/10.1002/ente.201500508>
 14. Jagadale, S. K.; Khot, K. V.; **Bagade, C. S.**; Mane, R. M.; Ghanwat, V. B.; Mane, R. K.; Mali, S. S.; Hong, C. K.; Bhosale, P. N. Novel Synthetic Route for the Synthesis of Ternary Cd(SSe) Photoelectrode and Their Photoelectrochemical Application. *Journal of Materials Science: Materials in Electronics* 2016, 28 (3), 2984–2995. <https://doi.org/10.1007/s10854-016-5884-4>
 15. Kharade, R. R.; Patil, P. B.; Khot, K. V.; Ghanwat, V. B.; Kondalkar, V. V.; **Bagade, C. S.**; Desai, N. D.; Mane, R. M.; Bhosale, P. N. Controlled Electrochemical Polymerization Strategies for Electroactive Polyaniline Thin Films. *Macromolecular Symposia* 2016, 362 (1), 7–10. <https://doi.org/10.1002/masy.201400262>
 16. Ghanwat, V. B.; Mali, S. S.; **Bagade, C. S.**; Khot, K. V.; Desai, N. D.; Hong, C. K.; Bhosale, P. N. Enhancement in Thermoelectric Performance of Cu₃SbSe₄ Thin Films by In(III) Doping; Synthesized

by Arrested Precipitation Technique. *Journal of Materials Science: Materials in Electronics* 2018, 29 (10), 8793–8800. <https://doi.org/10.1007/s10854-018-8896-4>

17. Patil, S. S.; **Bagade, C. S.**; Joshi, M. P.; Kharade, S. D.; Khot, K. V.; Mali, S. S.; Hong, C. K.; Bhosale, P. N. Facile Hydrothermal Assisted Synthesis of Time Dependent Cu₂S Thin Films for Efficient Photoelectrochemical Application. *Journal of Materials Science: Materials in Electronics* 2018, 29 (22), 19322–19335. <https://doi.org/10.1007/s10854-018-0059-0>
18. Joshi, M. P.; Khot, K. V.; Ghanwat, V. B.; Kharade, S. D.; **Bagade, C. S.**; Desai, N. D.; Patil, S. S.; Bhosale, P. N. Synthesis of Tin Sulphide Thin Film by Simple Arrested Precipitation Technique for Solar Cell Application. 2018. <https://doi.org/10.1063/1.5047691>
19. Shinde, D. B.; Ghanwat, V. B.; Khot, K. V.; Kondalkar, V. V.; Mane, R. M.; **Bagade, C. S.**; Jagdale, S. K.; Mane, R. K.; Bhosale, P. N. Low Temperature Simple Aqueous Phase Chemical Synthesis and Characterization of ZnO Thin Films. *Materials Today: Proceedings* 2017, 4 (2), 119–125. <https://doi.org/10.1016/j.matpr.2017.01.004>
20. **Bagade, C. S.**; Ghanwat, V. B.; Kamble, S. B.; Bhosale, P. N. Synthesis, Characterization and Application of Nanocrystalline CdZn(SeTe)₂ Thin Films for Energy Application. *AIP Conference Proceedings* 2018. <https://doi.org/10.1063/1.5047721>
21. Patil Pallavi B; Kondalkar Vijay V; Khot Kishorkumar V; **Bagade Chaitali S**; Mane Rahul M; Bhosale P.N. Dynamic Study of Bismuth Telluride Quantum Dot Assisted Titanium Oxide for Efficient Photoelectrochemical Performance. *Наносистемы: физика, химия, математика* 2016, 7 (4).
22. Khot Kishorkumar V; Ghanwat Vishvanth B; Patil Pallavi B; **Bagade Chaitali S**; Mane Rahul M; Shinde Dadaso B; Jagadale Sandip K; Jang Ji-Hyung; Bhosale P.N. Synthesis and Characterization of Highly Ordered Nanosized PbS Thin Films: Modified Silar. *Наносистемы: физика, химия, математика* 2016, 7 (3).
23. **Bagade Chaitali. S**; Ghanwat Vishvnath. B; Khot Kishorkumar. V; Patil Pallavi. B; Mane Rahul. M; Bhosale P.N. Facile Synthesis of (CdZn)Se Nanocrystalline Thin Films via Arrested Precipitation Technique (Apt) for Photovoltaic Application. *Наносистемы: физика, химия, математика* 2016, 7 (3).

PAPERS PRESENTED IN NATIONAL/INTERNATIONAL CONFERENCES/WORKSHOPS/SYMPOSIA

Sr. No.	Title of the Paper Presented	Authors	Title of Conference/Seminar Organized by with Date
1	Morphology Tailored Synthesis of 3D Hierarchical TiO ₂ Nanorods by Simple Hydrothermal Route	Pallavi Patil, Vijay Kondalkar, Neha Desai, Chaitali Bagade and P. N. Bhosale	Yashwantrao Chavan Institute of Science, Satara, 10-12 Oct. 2013, Emerging Trends and Techniques in Chemistry
2	Rapid Microwave Synthesis of MoBi ₂ S ₅ Nanoflowers and its Photoelectrochemical Performance	N. B. Pawar, S. D. Kharade, N. D. Desai, C. S. Bagade, S. V. Patil, P. N. Bhosale	2nd International Conference on Physics of Materials and Materials Based Device Fabrication (ICPM-MDF-2014), Dept. of Physics, Shivaji University, Kolhapur, 13th–15th Jan 2014
3	Effect of Copper Content on Optostructural, Morphological and Photoelectrochemical Properties of MoBi ₂ -xCu _x Se ₄ Thin Films	S. D. Kharade, V. B. Ghanwat, S. V. Patil, C. S. Bagade and P. N. Bhosale	National Symposium on Current Trends in Chemical and Nanosciences (CTCNS-2014), Dept. of Chemistry, SUK, 17th–18th Jan 2014
4	Synthesis and Characterization of ternary CdZnSe ₂ chalcogenide thin film by Arrested Precipitation Technique	C. S. Bagade, V. B. Ghanwat, S. D. Kharade, P. N. Bhosale	UGC (WRO) Sponsored National Seminar on Recent Trends in Analytical Chemistry (RTAC-2014), Art, Commerce and Science College, Sateral, Ahmadnagar, 30th to 31st Aug 2014
5	Rapid formation of ternary CdZnSe ₂ chalcogenide thin film by microwave assisted chemical bath deposition	C. S. Bagade, V. B. Ghanwat, S. D. Kharade, K. V. Khot, R. R. Kharade, N. D. Desai, P. N. Bhosale	Third International Conference on Polymer Processing and Characterization (ICPPC 2014), Mahatma Gandhi University, Kottayam, Kerala, 11th to 13th Oct 2014
6	Optostructural properties of chemically grown nanocrystalline CdZnSe ₂ thin Films	C. S. Bagade, V. B. Ghanwat, S. D. Kharade, K. V. Khot, P. N. Bhosale	National Conference on "Frontier in Chemical and Material Science" (FCMS-2015), Department of Chemistry, SUK, 16th to 17th Jan 2015
7	Synthesis of nanocrystalline Bi ₂ Se ₃ thin films by arrested precipitation technique	N. D. Desai, S. D. Kharade, C. S. Bagade, P. N. Bhosale	National Conference on "Frontier in Chemical and Material Science" (FCMS-2015), Department of

Sr. No.	Title of the Paper Presented	Authors	Title of Conference/Seminar Organized by with Date
			Chemistry, SUK, 16th to 17th Jan 2015
8	Synthesis and characterizations and thermoelectric properties of Cu ₃ SbSe ₄ thin films prepared by arrested precipitation technique	V. B. Ghanwat, S. S. Mali, C. S. Bagade, K. V. Khot, S. D. Kharade, R. R. Kharade, R. M. Mane, P. S. Patil, P. N. Bhosale	International Conference on Green Chemistry Catalysis, Energy and Environment (ICGC-2015), Department of Chemistry, Goa University, Goa, 22nd to 24th Jan 2015
9	Synthesis And Characterization Of Highly Ordered Nanosized Pbs Thin Films: Modified Silar	Kishorkumar V. Khot, Vishvanth B. Ghanwat, Pallavi B. Patil, Chaitali S. Bagade, Rahul M. Mane, Dadaso B. Shinde, Sandip K. Jagadale, P. N. Bhosale	International Conference On Nanomaterials And Nanotechnology (NANO 15), KSR Campus, Tiruchengode, India, 7th to 10th Dec 2015
10	Facile Synthesis Of (CdZn)Se Nanocrystalline Thin Films Via Arrested Precipitation Technique(Apt) For Photovoltaic Application	Chaitali. S. Bagade, Vishvnath. B. Ghanwat, Kishorkumar. V. Khot, Pallavi. B. Patil, Rahul. M. Mane and P.N. Bhosale	International Conference On Nanomaterials And Nanotechnology (NANO 15), KSR Campus, Tiruchengode, India, 7th to 10th Dec 2015
11	A chemical approach for synthesis of photoactive Cd _{1-x} Zn _x Se thin films via arrested precipitation technique and its solar cell application	C. S. Bagade, V.B. Ghanwat, K. V. Khot, P. B. Patil, S. D. Kharade, N. D. Desai and P. N. Bhosale	National Seminar of Application of Chemical and Material Science for Sustainable Development, Department of Chemistry, Shivaji University, Kolhapur, 20 Feb 2016
12	Single step fabrication of quaternary Cu ₂ Cd(SSe) ₂ thin films via arrested precipitation technique and their solar cell performance	K. V. Khot, S.S. Mali, V. B. Ghanwat, P. B. Patil, C. S. Bagade, N.D. Desai, S. K. Jagdale, D. B. Shinde, R. M. Mane and P. N. Bhosale	National Seminar of Application of Chemical and Material Science for Sustainable Development, Department of Chemistry, Shivaji University, Kolhapur, 20 Feb 2016
13	Thermoelectric Properties of In(III) Doped Copper Antimony Selenide Thin Films Deposited by Microwave Assisted Technique	V.B. Ghanwat, C.S. Bagade, N.D. Desai, K.V. Khot, S.M. Patil, M.P. Joshi, S.S. Patil, P.N. Bhosale	National Conference On Frontier Areas In Chemical Sciences (FACS-2017), Department of Chemistry, Y.C. Institute of Science, Satara, 27-28 Jan 2017

Sr. No.	Title of the Paper Presented	Authors	Title of Conference/Seminar Organized by with Date
14	Enhancement of power conversion efficiency of CZTS thin films via arrested precipitation technique for solar cell	Chaitali S. Bagade, Vishvanath B. Ghanwat, Suvarta D. Kharade, Edward Van Keuren and Popatrao N. Bhosale	National Conference on Innovative Research In Chemical Sciences (IRCS-2017), Department of Chemistry, Shivaji University, Kolhapur
15	Synthesis of tin sulphide thin film by simple arrested precipitation technique for solar cell application	MP Joshi, KV Khot, VB Ghanwat, SD Kharade, CS Bagade, ND Desai, SS Patil, PN Bhosale	The 3rd International Conference on Emerging Technologies: Micro to Nano 2017 (ETMN 2017), 7th to 10th Oct 2017, Solapur University
16	Synthesis, characterization and application of nanocrystalline CdZn(SeTe) ₂ thin films for energy application	Chaitali S Bagade, Vishvanath B Ghanwat, Santosh B Kamble, Popatrao N Bhosale	The 3rd International Conference on Emerging Technologies: Micro to Nano 2017 (ETMN 2017), 7th to 10th Oct 2017, Solapur University

REFERENCES

1. **Prof. (Dr.) P. N. Bhosale** Department of Chemistry, Shivaji University, Kolhapur-04. **Email:** p_n_bhosale@rediffmail.com **Contact No.:** 9420007500 (M), 0231-2609338 (O)
2. **Dr. C. V. Rode** Senior Principal Scientist, National Chemical Laboratory, Pune-411008. **Email:** cv.rode@ncl.res.in **Contact No.:** 9423531022
3. **Prof. Edward Van Keuren** Associate Professor and Director of Undergraduate Studies, Department of Physics and Institute for Soft Matter Synthesis and Metrology, Georgetown University, Washington, DC 20057. **Email:** Edward.Van.Keuren@georgetown.edu **Contact No.:** 202-687-5982
4. **Prof. Nazira Karodia** Professor, Chemistry and Forensic Sciences, University of Wolverhampton, UK. **Email:** Nazira.Karodia@wlv.ac.uk **Contact No.:** 01902 321920

I hereby declare that the above written particulars are true to the best of my knowledge.

(Dr. Chaitali Siddheshwar Bagade)