

Prof. (Dr.) Ashish Yengantiwar, Ph.D. (Physics)

Present position

Professor in Physics, Department of Physics, Fergusson College (Autonomous) Pune

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Work Experience

- Teaching: 24 years
- Research: 12 years (after award of PhD degree)

Personal Profile

I am working as Professor in Department of Physics, Fergusson College (Autonomous) Pune, India. I have obtained my Ph.D. (Physics) majored in Materials Science under the mentorship of Prof. Satishchandra B. Ogale, Senior scientist, National Chemical Laboratory in Pune, India and was awarded with PhD Physics degree (May 2013) under the guidance of Prof. Arun G. Banpurkar, Department of Physics, Savitribai Phule Pune University (formerly University of Pune), Pune.

Being a PhD recognized guide at Fergusson College (Autonomous) Pune in affiliation with Savitribai Phule Pune University, currently five scholars pursuing PhD degree under my guidance at the Physics Department research center, Fergusson College (Autonomous) Pune.

Presently, my research group is working on the synthesis of Si based anode materials vital for Li-ion battery technology with sanctioned grants of amount Rs. 20.1 lakhs by ISRO-SPPU for the years 2021-2023. Recently, we have received a sanction of the amount Rs. 42.3 lakhs from Department of Science & Technology- Science Engineering and Research Board (DST- SERB) Anusandhan National Research Foundation (ANRF) for three years (2023-2026) to work on the project entitled "Research & development of 3D printed electrodes for photoelectrochemical and electrocatalytic water splitting applications."

My research group is doing impactful research on the frontiers areas which include energy storage devices, electrocatalysis, photoelectrochemical water splitting and 3D printing as additive manufacturing techniques. We group members are looking forward to working in the energy sector with industries and making strong collaborations with them to understand the needs of the cutting edge research & society at large.

We acknowledge the grants received from UGC-DAE CSR, ISRO-UoP cell, Department of Science Technology- Science & Engineering Research Board (DST-SERB), ANRF Govt. of India. Also, we are grateful to the parent organization Deccan Education Society and Fergusson College (Autonomous) Pune for their constant support.

Course(s) Taught

- Research Methodology
- Quantum mechanics
- Classical electrodynamics
- Materials science

- Experimental techniques in physics
- Physics of semiconductor devices
- Physics of nanomaterials
- Optics
- Heat and thermodynamics
- Waves-oscillations and sound
- Atoms, molecules and solids
- Physics principles and applications
- Mechanics and properties of matter
- UG, PG practical laboratories

Field of Specialization/ Research Areas of Interests

- Study of nanomaterials for optoelectronics properties
- Photoelectrochemical and electrocatalytic water splitting for hydrogen generation
- Energy storage devices: Li-ion battery
- 3D Printing/Additive manufacturing

Education

- **Ph.D. (Physics):** from Aug 2007 to May 2013
Title of the Thesis: Growth of Zinc Oxide based Nanostructures: Optoelectronics and Hydrophobic Properties
Name of University / Institution: Department of Physics, University of Pune, Pune.
Date of PhD Award: 21st May 2013
- **Master of Science- (Physics):** 2001
 Institute of Science, Nagpur University, Nagpur
- **Bachelor of Science- (Physics):** 1999
 Shri Mathuradas Mohata Science College, Nagpur University, Nagpur

Fellowship/Awards/ Certifications/Achievements/Recognitions

1. One year **UGC Raman Post-Doctoral Fellowship at University of Alabama, USA**, which was awarded by UGC, New-Delhi (Govt. of India) for an academic year **2016-2017**.
2. **DES Appreciation award:** Appreciated by Deccan Education Society with award prize of Rs. 15,000 for the sanction of Project grants from government funding agencies at Department of Physics, Fergusson College (Autonomous) Pune.
3. **Awarded International US patent:** Shape Preserving Chemical Transformation of ZnO Mesostructures into Anatase TiO₂ Mesostructures for Optoelectronic Application, Subas Muduli, Onkar Game, Vivek Dhas, Ashish Yengantiwar, Abhik Banerjee, and Satishchandra Ogale, patent No.: US9290392B2, (**US Granted 2016**).
4. **Recognized guide in Physics** for M.Phil. and Ph.D. degree with Savitribai Phule Pune University from the year 2019 onwards.
5. Recognition as Permanent Post-Graduate (**PG**) **Teacher** of Savitribai Phule Pune University, Pune
6. Awarded with **Young Scientist Travel Grant** to participate in 15th International Conference on Frontiers of Polymers and Advanced Materials, (**ICFPAM 2019**) Centre for Ionics University of Malaya (CIUM), University of Malaya, 50603 Kuala Lumpur, Malaysia from June 17-21, 2019.
7. **Visiting Fellowship** by Jawaharlal Nehru Centre for Advanced and Scientific Research (JNCASR),

Bangalore in 2013-2014 (three months).

8. **Faculty Improvement Programme (FIP)** fellowship for the completion of PhD degree by UGC, New-Delhi (Govt. of India) from Jan- 2011 to Jan-2013.
9. **Qualified State Eligibility Test (MH-SET) in Physical Science**, accredited by U.G.C. & conducted by Savitribai Phule Pune University state Agency in February 2005.

Member of College Committees/ Professional Bodies and Others

College Level	Professional Bodies	Others
Programme Officer National Social Scheme (NSS) 2017-19, M.Sc. Practicals In-charge	Life member: IPA, MRSI, IAPT	Member of Dr. P. C. Shejwalkar Center for Entrepreneurship and Innovation (DSCEI), Pune
Academic Research Coordinator and coordinator of Research Coordination Committee (RCC) from year 2019 onwards	Annual member: RSC (2015 London), MRS (2014, 2017, 2018 USA), MRS (2013 Singapore)	Member of Board of Studies of Physics Subject at Deccan Education Society's Kirti M. Doongursee College of Arts, Science and Commerce (Autonomous) Dadar, Mumbai. Member of Board of Studies of Physics Subject at Yashvantrao Institute of Science (Autonomous) at Satara. Member of Board of Studies of Physics Subject at Deogiri College, Aurangabad.
IQAC member NAAC criterion-III In-charge for IVth Cycle at Fergusson College (Autonomous) Pune	Joint secretary: IAPT (Pune chapter 2013)	Yearly conducted Seed Money Project for teachers and Avishkar Competition for students in association with SPPU at College level

Employment History

- 1) **Organization** : Nagpur Polytechnic, Nagpur
Role : Lecturer (full time)
Duration : 12th August 2002 to 15th May 2003
- 2) **Organization** : Dr. Ambedkar College, Nagpur
Role : Lecturer (clock-hour-basis)
Duration : 12th August 2002 to 21st Feb 2003
- 3) **Organization** : G. H. Rasoni Polytechnic, Nagpur
Role : Visiting Lecturer
Duration : 28th August 2003 to 24th April 2004
- 4) **Organization** : Vidyabharati Mahavidyala, Amravati
Role : Lecturer (for Lien period)
Duration : 1st August 2005 to 19th November 2005
- 5) **Organization** : Fergusson College, (Autonomous) Pune
Role : Assistant Professor
Duration : Joining date: 21st November to 8th December 2019

Role : Associate Professor
Duration : 8th December 2019 to 27th April 2023
Role : Professor (present designation)
Duration : 27th April 2023 onwards

Research Projects

Title of the Project	Name of Funding Agency	Amount (Rs.)	Duration (Year) (From To)	Type (Minor/Major)	Outcome
Research and development of 3D printed electrodes for photoelectrochemical and electrocatalytic water splitting	DST-SERB, Govt. of India	Rs. 42.34 lacs	2023 to 2026	Major	Developed electrode fabrication and 3D manufacturing
Si based anode materials required for Li-ion battery technology	ISRO-SPPU cell	Rs.20.1 lacs	2021-2023	Major	Developed facilities for battery testing etc.
Perovskite-Oxides Materials for Efficient Photoelectrochemical Water Splitting	UGC-DAE Consortium for Scientific Research (CSR), Indore	Rs.1.35 lacs	2020-2023	Minor	Publications in reputed journal
Short Term Research Project Entitled “Study of CuFeO ₂ Photocathode Thin Films For Hydrogen Fuel”	STAR program “College of Excellence” (CE)	Rs. 24,000	2017-2018	Minor	Project work of PG/UG students
Photosensors based on metal – oxide nanostructures on flexible substrates	University Grant Commission College with Potential for Excellence (UGC-CPE)	Rs. 20,000	2014-2015	Minor	Project work of PG/UG students
Deposition of Zinc oxide nanostructures for optoelectronics applications	BCUD, Savitribai Phule Pune University	2.6 lakhs	2013 -2015	Minor	Publications in referred journals
Deposition & Characterizations of hydrophobic and hydrophilic thin films	BCUD, University of Pune	Rs. 2.5 lakhs	2009-2012	Minor	Publications in referred journals

Research Publications in National and International Journals

1. Pooja Sharma,Vishal Virole,Tauseef Anwar, Om Kolekar, Anup A. Kale, Shilpa S. Chapadgaonkar and **Ashish Yengantiwar**, Nanomaterials mediated and Biosorption based Photocatalytic Treatment for Efficient and Rapid Bioremediation of Textile Industry Wastewater, SPIE Proceedings Volume 13276, Second International Conference on Current Trends in Physics and Photonics (ICCTPP 2024); 132760I (Oct 2024) <https://doi.org/10.1117/12.3044561>

2. Pooja Sharma, Lina Khandare, Arindam Saha, Nandu B. Chaure and **Ashish Yengantiwar**, Growth of Mo-doped Ni₃S₂ nanorods array for superior overall water splitting reaction, *International Journal of Hydrogen Energy*, (Sept 2024), <https://doi.org/10.1016/j.ijhydene.2024.09.055> (now available online).
3. Vaibhavi Gulavani, Musthafa Ottakam Thotiyl, Bibin John and **Ashish Yengantiwar**, Post-mortem study and long cycling stability of silica/carbon composite as anode in Li-ion cells, *Journal of Physics D: Applied Physics*, 57 (41), 415501, (2024) <http://doi.org/10.1088/1361-6463/ad5b6f>
4. Vaibhavi Gulavani, Sandeep Kanade, Abhay Lokhande, Musthafa Ottakam Thotiyl, Bibin John and **Ashish Yengantiwar**, Core Shell Structured Silica/Porous Carbon Composite as an Efficient Anode for Lithium Ion Batteries, *Energy Technology*, 12 (8), 2400094, (2024) <http://doi.org/10.1002/ente.202400094>
5. Nitu Singh Parihar, Sushil Kumar Saraswat & **Ashish Yengantiwar**, Carbon coated Cu₂O/CuO nanowire photocathodes for enhanced photoelectrochemical water splitting performance, *Indian Chemical Engineer*, 66 (3), 282-295, (2024) <https://doi.org/10.1080/00194506.2024.2324251>
6. Pooja Sharma, Mahendra Acharya, **Ashish Yengantiwar**, Arunava Gupta, Enhanced solar water splitting using bismuth ferrite photoanodes grown by direct liquid injection chemical vapor deposition, *Materials Science in Semiconductor Processing*, 169, 107929 (2024). <https://doi.org/10.1016/j.mssp.2023.107929>
7. Neelima A. Patil, Yogita S. Patil, Ganesh L. Agawane, Manisha Kulthe, Jagdish W. Dadge, Ashish Yengantiwar, Alka Deshmukh, Effect of Annealing on the Physical Properties of LaFeO₃ Perovskite Nanomaterial Prepared by Co-Precipitation Method for H₂ Generation, *Materials Science Forum*, 1099(2), 139-144 (2023). <http://dx.doi.org/10.4028/p-C8u9ls>
8. Nuraini Ruslan, Muhammad Syarifuddin Yahya, Md. Nurul Islam Siddique, **Ashish Prabhakar Yengantiwar**, Mohammad Ismail, Md. Rabiul Awal, Mohd Zaki Mohd Yusoff, Muhammad Firdaus Asyraf Abdul Halim Yap, Nurul Shafikah Mohd Mustafa, Review on magnesium hydride and sodium borohydride hydrolysis for hydrogen production, *Crystals*, 12(10), 1376 (2022). <https://doi.org/10.3390/cryst12101376>
9. Mayuresh Kulkarni, **Ashish Yengantiwar**, Meenal Deo, Arun Banpurkar, Robust superhydrophobic and icephobic surface based on Teflon AF coated multiscale hierarchical ZnO/Cu₂O nanostructures, *Materials Science and Engineering: B*, 285, 115969 (2022). <https://doi.org/10.1016/j.mseb.2022.115969>
10. **Ashish Yengantiwar**, Meenal Deo, Arif Sheikh, ZnFe₂O₄/ZnO 0D-1D heterojunction for efficient photoelectrochemical water splitting, *Materials Science and Engineering: B*, 284, 115854 (2022). <https://doi.org/10.1016/j.mseb.2022.115854>
11. Harak, C., Mardikar, S., Gulavani, V., **Yengantiwar A.**, Pandit, V., Balgude, S. Superior photoelectrochemical performance of Fe₂O₃/g-C₃N₄, heterostructure synthesized by chemical precipitation method *Materials Today: Proceedings*, 53,134–138 (2022). <https://doi.org/10.1016/j.matpr.2021.12.428>
12. Firke, N., Gulavani, V., Sapkal, R., Sagdeo, P.R., **Yengantiwar, A.**, Plug and play electrodeposition cell: A case study of bismuth ferrite thin films for photoelectrochemical water splitting, *ECS Journal of Solid State Science and Technology*, 11(1), 013006 (2022). <https://doi.org/10.1149/2162-8777/ac4a7f>
13. **Ashish Yengantiwar** and Arun Banpurkar, Growth of ZnO nanorods array on PCB for enhanced UV photosensors, *Journal of Mountain Research*, 16(2) 21-34 (2021). <https://doi.org/10.51220/jmr.v16i2.4>
14. Pooja Sharma, Poonam Doiphode, Onkar Bhorade and **Ashish Yengantiwar**, Bismuth vanadate thin films for efficient photoelectrochemical water splitting, *Emergent Materials (Springer)*, 3, 187–194, (2020). <https://doi.org/10.1007/s42247-020-00093-2>
15. Sohan Thombare, Appasaheb Bhosale, Shrikant Kokare, and **Ashish Yengantiwar**, Effect of annealing of agglomeration of primary particles with anatase phase and tetragonal structure of TiO₂ thin films using spray pyrolysis deposition, *AIP Conference Proceedings*, 2142, 080014 (2019). <https://doi.org/10.1063/1.5122442>

16. **Ashish Yengantiwar**, Pravin S. Shinde, Shanlin Pan and Arunava Gupta, Enhanced Photocatalytic Performance of CuFeO₂ thin films grown by Chemical Vapor Deposition, Abstracts of papers of the American Chemical Society, 256, 343 (2018).
17. **Ashish Yengantiwar**, Pravin S. Shinde, Shanlin Pan and Arunava Gupta, Delafossite CuFeO₂ Photocathodes Grown by Direct Liquid Injection Chemical Vapor Deposition for Efficient Photoelectrochemical Water Reduction, Journal of The Electrochemical Society, 165 (13), H831-H837 (2018). <https://doi.org/10.1149/2.0471813jes>
18. **Yengantiwar, Ashish**, Palanivel, Soundararajan; Panikar, Archana ; Ma, Yanxiao; Pan, Shanlin; Gupta, Arunava, Direct Liquid Injection Chemical Vapor Deposition of Molybdenum Doped Bismuth Vanadate Photoelectrodes for Efficient Solar Water Splitting, Journal of Physical Chemistry C, 121 (11) 5914–5924 (2017). <https://doi.org/10.1021/acs.jpcc.6b12710>
19. Dastan, D., Leila Panahi, S., **Yengantiwar, A.P.**, Banpurkar, A.G., Morphological and Electrical Studies of Titania Powder and Films Grown by Aqueous Solution Method, Advanced Science Letters, 22 (4), 950-953 (2016). <https://doi.org/10.1166/asl.2016.7130>
20. Arif Sheikh#, **Ashish Yengantiwar**#, Meenal Deo, Sarika Kelkar and Satishchandra Ogale,(# equal contribution), Near-Field Plasmonic Functionalization of Light Harvesting Oxide-Oxide Heterojunction for Efficient Solar Photo electrochemical Water Splitting: The case of the Au NP / ZnFe₂O₄ / ZnO system, Small, 9(12),2091-2096 (2013). <https://doi.org/10.1002/sml.201202140>
21. Meenal Deo, Deodatta Shinde, **Ashish Yengantiwar**, Jyoti Jog, Beatrice Hannoyer, Xavier Sauvage, Mahendra More and Satishchandra Ogale, Cu₂O/ZnO Hetero-nanobrush: Hierarchical assembly, Field Emission and Photocatalytic Properties, Journal of Materials Chemistry, 22, 17055–17062 (2012). <https://doi.org/10.1039/C2JM32660D>
22. Lily Mandal, Meenal Deo, **Ashish Yengantiwar**, Arun Banpurkar, Jyoti Jog and Satishchandra Ogale, A Quasi-Liquid Iontronic –Electronic Light-Harvesting Hybrid Photodetector with Giant Response, Advanced Materials, 24, 3686–3691 (2012). <https://doi.org/10.1002/adma.201200613>
23. Subas Muduli, Onkar Game, Vivek Dhas, **Ashish Yengantiwar** and Satishchandra Ogale, Shape preserving chemical transformation of ZnO mesostructures into anatase TiO₂ mesostructures for optoelectronic applications, Energy & Environmental Science, 4, 2835-2839 (2011). <https://doi.org/10.1039/C1EE01515J>
24. Meenal Deo, Sarfraz Mujawar, Onkar Game, **Ashish Yengantiwar**, Arun Banpurkar, Sneha Kulkarni, Jyoti Jog and Satishchandra Ogale, Strong Photo-Response in a Flip-Chip Nanowire p-Cu₂O/n-ZnO Junction, Nanoscale, 3, 4706-4712 (2011). DOI <https://doi.org/10.1039/C1NR10665A>
25. **Ashish Yengantiwar**, Ramakant Sharma, Onkar Game and Arun Banpurkar, Growth of aligned ZnO nanorods array on ITO for dye sensitized solar cell, Current Applied Physics, 11:1, S113-S116 (2011). <https://doi.org/10.1016/j.cap.2010.11.111>

Participation in Conferences/Seminars/Symposia/Workshop:

1. Poster entitled “Hydrothermal synthesis of metal oxides nanostructures” in Regional Conference for Pune University College Teachers “**Innovation-2008**” at **P.V.P. College Pravaranagar, Loni** from 26 to 27 November 2008.
2. Poster entitled “Deposition of ZnO nanorods on ITO for dye sensitized solar cell” in **International Workshop on Nanotechnology and Advanced Functional Materials (NTAFM 2009) at National Chemical Laboratory (NCL)**, Pune from 9 to 11 July, 2009.
3. Poster entitled “Growth of aligned ZnO nanorods array on ITO for DSSC” in International Conference “**IUMRS-ICEM 2010**” at **KINTEX, Seoul, South Korea** from 22 to 27 August, 2010.
4. Poster entitled “Fabrication of UV photoswitchable ZnO nanorod based varistor on interdigitated Cu-electrode” in the “Science Day” at **National Chemical Laboratory, Pune** from 24 to 25 February, 2011.
5. Poster entitled “New approach towards synthesis of nanostructured ZnFe₂O₄/ ZnO heterojunction array for efficient and stable solar photo-electrochemical application” in one-day symposium

- organized by **Physical & Materials Chemistry Division, National Chemical Laboratory, Pune** on 13th December, 2011.
6. Poster entitled “Study of wetting properties of ZnO nanorods deposited by open aqueous solution deposition” at **Raman Memorial Conference “RMC-2012” at Department of Physics, University of Pune (UoP)** from 2nd to 3rd March, 2012.
 7. Oral presentation entitled “Deposition and characterization of hydrophobic and hydrophilic thin films” on minor research project sanctioned by BCUD, University of Pune (UoP) in Regional Conference for Pune University College Teachers “Innovation-2012” held at Bharatiya Jain Sanghatana’s Arts, Science and Commerce College, Wagholi, Pune from 26 to 27 March, 2012.
 8. Thesis presented entitled “Growth of Zinc Oxide Based Nanostructures: Optoelectronics and Hydrophobic Properties” at **Raman Memorial Conference “RMC-2013” at Department of Physics, University of Pune (UoP)** from February 22nd to 23rd, 2013.
 9. Poster entitled "Synergistic Enhancement of Photoelectrochemical Activity by Nanostructuring, Hetero-interfacing and Plasmonic Functionalization: The case of Au NP/ZnFe₂O₄/ZnO system" presented in “**2013 MRS Spring Meeting**” at **San Francisco, California, USA** from April 1-5, 2013 (In Absentee).
 10. Poster entitled “Zinc Oxide (ZnO) Nanorods Based Ultraviolet Photo-switchable Device Configuration” presented in **International Conference of Materials for Advanced Technology (ICMAT 2013), held at Suntec, Singapore** during June 30-July 5, 2013.
 11. Poster entitled “Soft chemical approach towards synthesis of nanostructured ZnFe₂O₄/ ZnO hetero-junction array for efficient and stable photo-electrochemical cell” presented in International Workshop on **Nanotechnology and Advanced Functional Materials (NTAFM 2013), held at National Chemical Laboratory (NCL) Pune**, India from 24th to 25th July, 2013.
 12. Poster entitled “Growth of ZnO-Cu₂O Multiscale Hetero-nanostructures for Superhydrophobicity and Droplet Bouncing” presented in “**2013 MRS Fall Meeting**” at **Boston, Massachusetts, USA**, from 1st to 6th December, 2013.
 13. Poster entitled “Deposition of Zinc oxide nanostructures for optoelectronics applications” presented in **Innovation-2014 held at H.V. Desai College, Pune** from April 25th to 26th, 2014.
 14. Research paper presented as part of minor research project “**Innovation- 2015**” Regional Research Conference for University and College Teachers held at **Fergusson College, Pune-4** on June 17-18, 2015.
 15. Oral presentation of paper entitled “Growth of ZnO Nanostructures on Transparent Conducting Flexible Metal Nanowire Frame-Network” by A.P. Yengantiwar, K. Shanmugam, and G. U. Kulkarni in **National Symposium on Medical Biophysics (NSMB-2015) at Department of Physics, Savitribai Phule Pune University** on September 24-25, 2015.
 16. Participated in 2nd Collaborative Gurutva National Conference for Life held at **VAMNICOM, Pune** on Jan 23-24, 2016.
 17. Participated in One day workshop on “Test and Measurement solutions for Advanced Materials” held at **Centre for Sensor Studies, department of Electronics, Savitribai Phule Pune University** on January 9, 2016.
 18. Participated in “**2017 MRS Spring Meeting & Exhibit**” from April 17- 21, 2017 at **Phoenix, Arizona, USA**.
 19. Poster presented “Efficient water reduction of CuFeO₂ thin films by chemical vapor deposition” at **Conference on Advances in Catalysis for Energy and Environment (CACEE-2018), TIFR, Mumbai** from 10th January to 12th January 2018.
 20. Received a second-best poster award in the “**Frontiers in Physics FIP-XII**”, entitled “Photoelectrochemical water splitting of BiVO₄ thin films by dip coating” by Pooja Sharma, Poonam Doiphode, Onkar Bhorade and Ashish Yengantiwar organized by department of Physics at **Fergusson College (Autonomous)** on 1st and 2nd Feb 2019.

21. Participated also presented a talk on entitled “Efficient water reduction from CuFeO_2 thin films by chemical vapor deposition” in a **Refresher/short course programme on Flexible Electronics at IIT Kanpur** from 2nd – 7th July 2018.
22. Presented a poster entitled “Chemically synthesized pure and Sr-doped CuBi_2O_4 for photoelectrochemical application ” in the **2nd International Conference on Recent Trends in Bioengineering (ICRTB-2019) organized by MIT school of Bioengineering Sciences and Research at MIT-ADT University, Pune** on 16th February 2019.
23. Presented a poster “Bismuth Vanadate Semiconducting Photoanode for Efficient Photoelectrochemical Water splitting” in **5th one-day Mumbai-Pune Semiconductor Meeting (MPSM 2019) on 2nd March 2019 at IIT Bombay, Mumbai.**
24. Presented a poster “Perovskite-Oxides Materials for efficient Photoelectrochemical Water Splitting” for Participation in **Indus Synchrotrons Users’ Meeting (ISUM 2019)** on March 27-29, 2019 at **UGC DAE CSR, Indore.**
25. Oral presentation entitled “Growth of Bismuth Vanadate Photoanodes by Dip Coating for Efficient Water Splitting” in **15th International Conference on Frontiers of Polymers and Advanced Materials, (ICFPAM 2019) Centre for Ionics University of Malaya (CIUM), University of Malaya, 50603 Kuala Lumpur, Malaysia** from 17th to 21st June 2019.
26. Awarded second prize for a poster presented on “Electrochemically deposited Bismuth Ferrite Thin Films for Photoelectrochemical Water Splitting” by Vaibhavi Gulavani and Ashish Yengantiwar in two days **National Conference: Frontiers in Physics XIV** on 24th and 25th March 2021 organized by Astro Club and Department of Physics, **Fergusson College (Autonomous) Pune.**
27. Received the Best oral award in **RAiSE 2021**, An international Conference on Photovoltaics, Solar Thermal, Energy Storage and Solar Fuels, entitled “**Bismuth ferrite photocathodes for photoelectrochemical water splitting**” by Vaibhavi Gulavani and Ashish Yengantiwar held between 2nd - 4th December 2021, organized by DST-IITM Solar Energy Harnessing Centre, Institute of Technology, Madras.
28. Presented a Poster entitled “**Study of $\text{BiFeO}_3/\text{WO}_3$ heterojunction photocathode for photoelectrochemical water splitting**” by Akshada Sutar, Pooja Sharma and Ashish Yengantiwar, in Low-Dimensional Materials (LDM) 2022, A discussion forum on chemistry and physics of emerging materials held at IISER, Pune from 19th -20th May 2022.
29. Participated in an International Conference “Meeting on Energy Storage Devices (IMESD 2023)” from 7th to 10th December 2023 at IIT Roorkee.
30. Oral presentation on “**Nanomaterials mediated and Biosorption based Photocatalytic Treatment for Efficient and Rapid Bioremediation of Textile Industry Wastewater**” at International Conference on Current Trends in Physics and Photonics (ICCTPP-2024) was held on 9th to 11th July 2024 at MIT-WPU, Pune.

Events Organized/Coordinated:

Sr. No	Name of the Event	Name of organizing Institute/ College/ University	Nature of contribution	Dates
1.	National Conference on Advanced Materials and Applications (NCAMA-2016)	Department of Physics, Fergusson College with the support from BCUD, Savitribai Phule Pune University and Department of Biotechnology (DBT), Govt. of India	Organizing Secretary	4 th & 5 th March 2016
2.	Introduction to Nanomaterials and Nanoscience	Department of Physics, Fergusson College	Course coordinator	18 th December 2014 to 27 th December

				2014
3.	Innovation- 2015	Fergusson College (Autonomous) Pune	Organizing Committee Member	June 17-18, 2015
4.	Magical Nanoworld	Fergusson College (Autonomous) Pune	Course Coordinator	Feb 9, 2016
5.	Introduction to Electrochemistry	Fergusson College (Autonomous) Pune	Programme Co-ordinator	3 rd December to 7 th Dec 2018
6.	Celebration of Golden Jubilee year of Post graduate section in Dept. of Physics	Fergusson College (Autonomous) Pune	Programme Co-ordinator	Series of 8 lectures/webinars conducted
7.	Search before Research	Virtual Workshop	Organizer	28 th to 30 th December 2020
8.	Nanosense- A virtual skill enhancement program on interdisciplinary nanoscience	Virtual Workshop	Programme Co-ordinator	28 th September to 7 th December 2021
9.	Student Exchange Program (For MSc Students)	Fergusson College (Autonomous) Pune and YCIS, Satara	Programme Co-ordinator	21 st – 25 th March 2022 and 11 th -12 th April, 2022
10.	Fundamentals of Battery Science	Two-day Workshop at Fergusson College (Autonomous) Pune	Organizer	22 nd to 23 rd July 2022
11.	Grant Writing Workshop	Fergusson College (Autonomous) Pune	Organizing Committee Member	26 th to 27 th July 2022
12.	Student Exchange Program (For PhD scholars)	Fergusson College (Autonomous), Pune and MBM University, Jodhpur	Organizer	23 rd to 29 th August 2022
13.	Avishkar Competition at College level in association with Savitribai Phule Pune University	Fergusson College (Autonomous) Pune	Coordinator RCC, Academic & Research Coordinator	16 th September 2022, 25 th September 2023 and 27 th September 2024
14.	Guest lecture by Prof. Angela Vella and Dr. Simona Moldovan, University of Roen, France under UGC-	Department of Physics, Fergusson College (Autonomous) Pune	Co-ordinator	17 th Feb 2023

	STRIDE component-I			
15.	Additive Manufacturing and its Current Landscape in Research	DST SERB (ANRF) One-Day Workshop at Department of Physics, Fergusson college (Autonomous) Pune	Organizer	17 th Feb 2025

Additional skills/Activities

Resource Person in workshop/symposia:

1. A talk entitled “Growth of ZnO nanorods and its applications for DSSC and photo-switchable varistor” in UGC sponsored State Level Workshop on “**Nanotechnology and its applications in Polymaterials and Biomaterials**” held at Department of Physics, New Arts, Commerce and Science College, Shevgaon, Dist. Ahmednagar from 12th to 13th January 2011.
2. Delivered a virtual guest talk on “**Recent trends in Nanoscience and Nanotechnology**” on 28th October 2020 at Sarhad College of Arts, Commerce & Science Katraj, Pune.
3. A virtual talk entitled “**Ethics in Research and Publications**” at certificate course in research methodology and publication ethics at Garware college, Pune on 2nd April 2021.
4. Delivered a talk as a young scientist researcher entitled “**Metal oxide thin films nanostructures for efficient photoelectrochemical water splitting**” in international e-conference on Energy and Environment organized by Engineered Science Publisher, USA from 27th -30th May 2021 at Department of Physics, Savitribai Phule Pune University.
5. Delivered a virtual talk on “**UV-Visible spectroscopic characterization technique**” on 19th November 2021, in “**Nanosense- A virtual skill enhancement program on interdisciplinary nanoscience**” organized by Fergusson College (Autonomous), Pune in association with Bajaj College of Science, Wardha from 28th September to 7th December 2021.
6. Virtually guided six project interns of B.E. second year, Chemical Engineering, MBM University on “**Microbial fuel cells**”, for their six weeks summer internship program organized by Dr. Sushil Saraswat, Chemical Engineering, MBM University, Jodhpur (R.J.), India.
7. Invited for a talk at International Conference **ICEFN2025**, scheduled to be held at Kumaun University, Nainital, from **March 20th to 22nd, 2025**.

Participation in Orientation/ Refresher courses:

1. “**General Orientation Programme**” sponsored by UGC held at UGC-ASC from 12th January to 8th February 2009.
2. UGC sponsored “**Refresher Course in Physics**” held at the Department of physics, University of Pune, Pune from 16th November to 6th December 2010.
3. Completed the “**Refresher course in Nanosciences**” held at Kerala University Thiruvananthapuram, Kerala during the period from 11th November 2014 to 1st December 2014.
4. Participated a Refresher/short course programme on “**Flexible Electronics**” at **IIT Kanpur** from 2nd – 7th July 2018.
5. Participated in UNESCO’s “**Faculty Development Programme on Active Learning in Optics and Photonics (Physics)**” conducted at the Defense Institute of Advanced Technology (DIAT-DU), Pune from 08-12-2019 to 13-12-2019.

6. Completed the academic course entitled “**Advanced course on Special theory of relativity**”, offered by Prof H. C. Verma, IIT Kanpur under CCE from 26th January to 19th May 2020.
7. Completed the academic course with excellent remarks entitled “**Classical Electromagnetism-1 (Electrostatics)**”, offered by Prof H. C. Verma, IIT Kanpur under CCE from 15th August to 13th December 2020.
8. Completed Successfully the Faculty Development Programme on “**NPTEL-AICTE certificate course on mechanical measurements and systems**”, (Sept- Nov 2020).
9. Participated in “Effective Supervision and the Modern Doctorate” International workshop, organized under NIWASm project and funded by 'UTFORSK' grant awarded to Bioinformatics Center, SPPU and Dept of Natural Sciences and Environmental Health, University of South-Eastern Norway, Norway. to be held on Tuesday, March 19, 2024 at the Department of Health Sciences, Savitribai Phule Pune University.

International Collaboration:

1. **Co-Investigator** for the project under Fundamental Research Grant Scheme (FRGS 2020-2021) entitled Investigation on the effect of catalyst on hydrolytic performance of MgH_2 in hydrogen production in collaboration with **Dr. Muhammad Syarifuddin Yahya, faculty of Ocean engineering Technology and informatics, University Malaysia Terengganu, Malaysia** as Principal Investigator.
2. Worked as one-year post-doctoral research fellow (Raman Fellowship) on the project entitled “Highly efficient photo-electrochemical water splitting using semiconductor thin films grown by chemical vapor Deposition” under the mentorship of **Prof. Arunava Gupta, University of Alabama, Tuscaloosa, USA.**

Seed Money Research Project completed:

Successfully completed six months’ research project “**Deposition of electrocatalyst from wastewater for water purification and water splitting**” under the seed money grants sanctioned of **Rs. 35,000** by Deccan Education Society. Project Intern Ms. Krishna Relekar and PhD scholar Ms. Pooja Sharma worked in collaboration with Dr. Manaswi Gurjar, Department of Microbiology, Fergusson College (Autonomous) Pune.

Research Scholars Achievements:

Vaibhavi Gulavani: Awarded PhD scholar with **INSPIRE Fellowship** Programme w.e.f. **20th April 2022.**

Pooja Sharma

- Appointed as Project Associate-I on **1st April 2023** under DST-SERB research project Project.

Gangadhar Hattale

- Awarded Junior Research Fellowship on **29th April 2022** under MJPRF by Mahatma Jyotiba Phule Research and Training Institute (**Mahajyoti**), Nagpur, India.

Course Content Developed (e-content)

Links to the e-content available on YouTube channel:

<https://youtu.be/hJCDfV0e1Mc>

<https://youtu.be/jHPstPKplm0>

<https://youtu.be/Nz3KhVOttBM>
<https://youtu.be/UfPm-JoJdDM>
<https://www.youtube.com/playlist?list=PL3bbv42DL53nYsqvSzcRbu2ZmYE1O0qRM>
<https://youtu.be/GNABpMi3Wc8>
<https://youtu.be/ks3qKMj43UY>
https://www.youtube.com/watch?v=Z_WElORem1c&t=97s

Consultancy Services

We have research facilities in the laboratory which includes, **Newport Solar Simulator**, **Potentiostat-galvanostat (Palmsens)**, Milli-Q deionized water purifier, tube furnace (temperature range upto 1150 °C) under controlled environment (Ar, N₂ etc.), battery tester (coin-cell), Hot-roll press, coin- cell cutting machine, dip coating unit, spin coater, hydrothermal autoclaves, fume hood for reaction, vacuum oven, laboratory oven etc.

The additive manufacturing facilities also include FDM 3D printer, Direct Ink Writer (DIW) which is used for carrying out research project work in the laboratory and these facilities will be explored for collaborative as well as consultancy services.

Date: 3rd March 2025
Place: Pune

Prof. (Dr.) Ashish Yengantiwar