

Department of Physics



1. Name: **Dr. Ms. Lata Devappa Jadhav (Ekal)**
2. Designation: **Professor Head, Dept of Physics
I/C Director, Pre IAS Training Centre, Kolhapur**
3. Date of Birth: **15th Aug 1973**
4. E-mail address: **ldjadhav.phy@gmail.com; ld.jadhav@gov.in**
5. Qualification: **M.Sc. Ph.D**
6. Subject Specialization: Electrochemical Energy Materials: Battery Materials, Fuel Cell materials, Thin films, Solid State Physics, Energy Science.
7. **Experience:**
 - i) Teaching: Undergraduate: **16** Post graduate: **08**
 - ii) Research: **24**

8. Publications

Research Publications

<https://scholar.google.com/citations?hl=en-US&user=IHuNldIAAAAJ>

ORCID iD

<https://orcid.org/0000-0001-8317-7327>

Vidwan-ID : 349063

<https://vidwan.inflibnet.ac.in/profile/349063>

Reference books:

1. S.H. Pawar and **L. A. Ekal** “**Advances in Renewable Energy Technologies**” Proceedings of the National Symposium on “Recent Advances in Renewable Energy Technologies” 13-15th Aug. 2002. **Narosa Publishing House, New Delhi, 2003.**
2. Dr Ketaki K Patankar, Dr Rajesh K Nimat, Dr Lata D Jadhav
A Treatise on Experiments in Thermal Physics Acoustics and Wave Optics
ISBN no.: 978-93-5611-330-5

Text Books:

All books published by Nirali Publishers

1. Physics Part-III, DSC B1 Electricity And Magnetism-I, ISBN 978-93-5451-926-0
Dr. V. V. Killedar, Dr. T. J. Shinde, Dr. L. D. Jadhav, Dr. J. S. Ghodake, Dr. P. D. Kamble
2. Physics Part-III, DSC B2 Electricity And Magnetism-II ISBN 978-93-5451-925-3

- Dr. V. V. Killedar, Dr. T. J. Shinde, Dr. L. D. Jadhav, Dr. J. S. Ghodake, Dr. P. D. Kamble
3. A Laboratory Handbook: Physics Practical BSc I
Dr. V. V. Killedar, Dr. T. J. Shinde, Dr. L. D. Jadhav, Dr. J. S. Ghodake, Dr. P. D. Kamble
 4. A Laboratory Handbook: Physics Practical BSc II
Dr. V. V. Killedar, Dr. T. J. Shinde, Dr. L. D. Jadhav, Dr. J. S. Ghodake, Dr. P. D. Kamble, Dr. S. V. Malgaonkar
 5. Thermal Physics and Statistical Mechanics-I ISBN 978-81-19117-56-7
Dr. V. V. Killedar, Dr. T. J. Shinde, Dr. L. D. Jadhav, Dr. J. S. Ghodake, Dr. P. D. Kamble, Dr. S. V. Malgaonkar
 6. Waves and Optics-I ISBN -978-81-19117-57-4
Dr. V. V. Killedar, Dr. T. J. Shinde, Dr. L. D. Jadhav, Dr. J. S. Ghodake, Dr. P. D. Kamble, Dr. S. V. Malgaonkar

9. Projects:

Sr No	Title of Project / Scheme	Funding Agency	Funds received	Duration	Collaborator, if any
1	Studies on LiFePO ₄ /rGO nano-composite cathode for improved electrochemical performance of Li ion battery	BRNS	Rs. 34.04	Sept 2015-30 th Sept 2018	Dr. B.N. Wani, BARC, Dr. P.S. Patil, SUK
2	Studies on Synthesis and Characterization of nano-structured La _{1-x} Sr _x Co _{1-y} Fe _y O _{3-δ}	DRDO	Rs. 11.68 lakh	12 th Nov. 2012 to 11 th Nov. 2015	Prof. C.H. Bhosale, SUK, Co-investigator
3	Investigations on NiO-GDC/GDC structures for the Development of Intermediate Temperature Solid Oxide Fuel Cells	BRNS	Rs. 13.66 Lakh	1 st April 2010 to 31 st March 2013	Dr. S. R. Bharadwaj, BARC, and Dr. P.S. Patil, SUK
4	Investigations on structural and electrical properties of Ni-GDC cermet as anode for Solid Oxide Fuel Cells	UGC-DAE CSR	1.05 lakh	1 st April 2007 to 31 st March 2010	--
5	Studies on synthesis and characterization of oxygen ion conductors in thin film form	DRDO	14.49 lakh	2 nd March 2005 to 30 th Sept. 2008	--

10. Awards and Recognitions

1. Member of Board of Studies in Physics: Shivaji University, Kolhapur
2. Member of Board of Studied in Physics: MGM University, Aurangabad

3. **Secretary of Indian Association of Physics Teachers RC08 for 2022-24**
4. **Member to Executive Council of Indian Association of Physics Teachers RC08 for 2019-21**
5. Mr. Rohan Kamat, PhD student received best oral presentation award at International Conference on '**Recent Trends in Fabrication of Nanomaterials and Their Applications**'
6. Best poster presentation award at MCMFT, Rajaram College, Kolhapur 2014.
7. Biography included in 2011 edition of **Who's Who in the World**
8. Best oral presentation at 3rd National Symposium for Materials Research Scholars, 2010, MR – 10, IIT, Mumbai
9. Best research paper presentation award in National Symposium on Nano-Materials and their Application – 2009, Pune for the paper "Synthesis and characterization ..." by M.G. Chourashiya and **L.D. Jadhav**
10. Best Research paper presentation award in XI AGM-Materials Research Society of India, 2000 for the paper "Electrochemical Oxidation of Hg-Ba-Ca-Cu alloyed Films" by S.H.Pawar, D.D. Shivagan, L.A. Ekal and P. M. Shirage
11. **Dr. Jagdish S. Shirke Prize** for securing highest marks in **Physics** (Principle) at the B.Sc. examination.

11. Research Guidance

Research Guide in the subject of Physics and Nano Science and Technology Shivaji University, Kolhapur

1. M.Sc. /M. Phil./ Ph.D. guidance :

Sr. No.	Name of the student	Registered for M. Phil. / Ph.D.	Date of registration	Title of Research	Status	Financial Support
1.	Mr. Muralidhar Girish Chourashiya	Ph.D.	1 st Jan. 2007	Studies on synthesis and characterizations of gadolinium doped ceria solid electrolyte	Awarded 28 th April 2010	JRF DRDO project
2.	Ms. Archana Uttamrao Chavan	Ph.D.	1 st Jan. 2010	Development of Ni-GDC cermet as anode material for intermediate temperature solid oxide fuel cell	Awarded 3 rd Aug 2013	JRF BRNS Project and SRF CSIR
3.	Mr. Atul Prabhakar Jamale	Ph.D.	1 st Jan. 2010	Studies on synthesis and characterization of Nano-structured $\text{La}_{0.6}\text{Sr}_{0.4}\text{Co}_{1-x}\text{Fe}_x\text{O}_{3-\delta}$ as cathode for Solid Oxide Fuel cell	Awarded 13 th Feb 2015	UGC Teaching assistance Shivaji University, Kolhapur
4.	Ms. Sarika Popatrao Patil	Ph.D.	1 st July 2010	Synthesis and characterization of anode materials for hydrocarbon fueled intermediate temperature	Awarded 22 nd March 2016	JRF (01 yr) BRNS Project

				solid oxide fuel cells.		
5.	Ms. Swati Tanaji Jadhav	Ph.D.	1 st July 2011	Synthesis and characterization of $\text{Ce}_{0.9}\text{Gd}_{0.1}\text{O}_{1.95}$ (gdc)- $\text{BaCe}_{0.8}\text{Y}_{0.2}\text{O}_{3-\delta}$ (bcy) based triple phase composite as an anode for solid oxide fuel cell application	Awarded 19 th Sept. 2016	JRF DRDO Project
6.	Ms. Snehal Uttamrao Dubal	Ph.D.	1 st July 2011	Synthesis and characterization of Proton conducting $\text{BaCe}_{1-x}\text{Y}_x\text{O}_{3-\delta}$ thin films as an electrolyte for application in solid oxide fuel cell	Awarded 28 th April 2016	RG fellowship for SC/ST
7.	Mr. Swapnil Jinendra Rajoba	Ph.D.	1 st July 2013	Synthesis and characterization of graphene oxide – LiFePO_4 composite for lithium ion batteries	Awarded 12 th Sept 2018	JRF/SRF BRNSproject
8.	Ms. S.B. Mahadik	Ph.D	2016 VTU Belgaum	Characterization of Spray deposited metal oxide composite thin films for energy storage application	Working	
9.	Ms. Chetna Mulik	Ph.D.	1 st July 2017	Studies on the effect of Mn, Ni and Cu doping on the structural, morphological and electrochemical performance of LiFePO_4 composite for Li ion batteries	Working	Maharashtra Govt CM Sarthi Fellowship
10.	Mr. Rohan KAMAT	Ph.D.	1 st July 2018	Synthesis, characterization of two dimensional titanium carbide (MXene) and its Electrochemical Energy Applications	Working	
11.	Mr. Sanket Yadav	Ph.D.	1 st July 2018	Studies on synthesis and characterization of Molybdenum disulfide based composite for Lithium ion Battery application	Working	Maharashtra Govt. Sarthi Fellowship
12.	Ms. Salunkhe S.R.	Ph.D.	01/01/2020 Ph.D. Registered	Studies on Properties of BaTiO_3 based Ferroelectric Nanomaterials	Working	Maharashtra Govt. Sarthi Fellowship

13.	Ms. Sanjana Bhosale	Ph.D.	01/07/2022 Ph.D. Registered	Electrochemical investigation of layered lithium rich oxide cathode materials for lithium ion batteries	Working	
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M. Tech. Students Guided: 05

M.Sc. Nanotechnology: Project: 03

12. Research papers presented at following International/National Conferences/ Seminars

1. 37th Annual Convention of IAPT Convention, Jaipur organized by Rajasthan 7-10th Oct 2023
2. International Conference on '**Recent Trends in Fabrication of Nanomaterials and Their Applications**' 15/03/2023 Rajarshi Chh. Shahu College, Kolhapur chaired one session
3. DAE-BRNS 9th Interdisciplinary Symposium on Materials Chemistry (**ISMC-2022**) Dec. 7-10, 2022 Chemistry Division, BARC in association with Society for Materials Chemistry (SMC)
4. Local ISRAPS Discussion Meeting Cum One Day Symposium on "EMERGING ROLE OF RADIATION IN NANOTECHNOLOGY: FUNDAMENTAL TO TRANSLATIONAL RESEARCH" 18/10/2022 Jointly organized by Indian Society for Radiation and Photochemical Sciences (ISRAPS) and School of Nanoscience and Technology, Shivaji University Kolhapur **Local Advisor**
5. 3rd Indian Materials Conclave (IndMac) and 32nd Annual General Meeting of MRSI " held between 20-23 December, 2021, organized by Indian Institute of Technology, Madras.
6. International E-Conference on Strategies & Challenges in Higher Education during COVID-19 Lockdown period in India with reference to the World, 15-17th May 2020 Govt Vidarbha Institute of Science & Humanities
7. International Meeting on Energy Storage Devices (IMESD)-2018, IIT Roorkee 10-12th Dec 2018.
8. International Conference on Electrochemistry in Advanced Materials, Corrosion and Radio pharmaceuticals, (CEAMCR-2018), 15-17 Feb. 2018, BARC, Mumbai. Indian Society for ElectroAnalytical Chemistry
9. International Conference on Advanced Rechargeable Batteries & allied Materials-2017 (ICARBM-2017)- 8-10 Mar., 2017 C_MET, Pune
10. 6th Interdisciplinary Symposium of Materials Chemistry, BARC Mumbai, 6-10th Dec. 2016.
11. International Conference on Materials Science and Ionizing Radiation Safety and Awareness. January 28-30, 2016 Shivaji University, Kolhapur.
12. Recent trends & Future Prospects in Multidisciplinary Approaches in Microbiology RTFPM Oct. 2014. Department of Physics, Rajaram College Kolhapur
13. UGC sponsored National Conference on Materials for Future Technology; Rajaram College; 26-27th Sept. 2014.

14. 2nd International Conference on Physics of Materials And Materials Based Device Fabrication (ICPM-MDF-2014) : Shivaji University, Kolhapur; 13-15th Jan., 2014
15. International Conference on Emerging technologies: Micro to Nano 2013 (ETMN 2013); BITS Pilani, Goa; 23-24th Feb. 2013.
16. 2nd National Seminar on Physics of Materials and Materials based Device Fabrication; Shivaji University; 4-5 Jan. 2013.
17. DAE-BRNS 4th Interdisciplinary Symposium on Materials Chemistry ISMC-2012; BARC, Mumbai; 11-15th Dec. 2012.
18. International conference on Materials Science and Technology ICMST-2012; St. Thomas College Pala, Kottayam; 10-14th June 1012.
19. 1st International Conference on Physics of Materials And Materials Based Device Fabrication (ICPM-MDF-2012) : Shivaji University, Kolhapur; 17th-19th Jan., 2012
20. 3rd International Symposium on Materials Chemistry, 2010, BARC, Mumbai Dec 7-11, 2010
21. 3rd National Symposium for Materials Research Scholars, 2010, MR – 10 IIT Mumbai May 7-8, 2010.
22. National Seminar on Advanced Synthetic Methodologies and Functional Materials -2009 arranged by UGC and Dept. of Chemistry, SUK 23-24 Dec 2009.
23. International Conference on Nano-Material and Applications (ICNAMA-08) 9-11 Dec. 2008
24. International Conference on Advances in Energy Research, 12th – 14th Dec. 2007, IIT, Bombay
25. International Conference on Advanced Materials and application, SUK Nov. 2007.
26. 18th Annual General Meeting Materials Research Society of India (MRSI) 11th -14th Feb. 2007 organized by NPL, MRSI Delhi Chapter.
27. International Symposium on Advances in Electrochemical Science and Technology 28-30th Nov. 2006 Goa, organized by SAEST, Karaikudi.
28. The National Seminar on Materials for Advanced Technologies (NASMAT-2006), Organized by Department of Physics, Shivaji University, Kolhapur during 23 – 25, January 2006.
29. The Discussion Meeting on Materials for Future Energy System, at Multipurpose Hall, BARC, TSH, Mumbai during 18 – 19 Jan, 2006. Sponsored BRNS, DAE, Government of India.
30. The National Seminar And Group Discussion Meeting Of DRDO Sponsored Research Project PIs In Chemistry, School of Chemistry, Andhra University, Vishakhapatnam, 2 – 3 December 2005.
31. National Seminar on Materials Processing and Characterization Techniques; 28-29th March 2005.
32. International Seminar on Smart Materials, Nanocomposites, Industrial Applications and Devices, 28-29th June 2000, Dept. Of Physics, Shivaji University, Kolhapur
33. 6th National Convention of Electrochemists, 1995, CECRI, Karaikudi.
34. National seminar on Physics of Devices and Modern Applications, 23rd March 2000, Dept. Of Physics, Shivaji University, Kolhapur
35. Conference of Superconductivity, 1997, University of Hyderabad, Govt. Of India, DST, UGC, UGC(SAP).
36. 7th National Convention/Conference of Electrochemists (18-20 Nov. 1996), Shivaji University.

Workshops attended

1. Government e-Marketplace Training 25th Sept 2023 organized by Jilha Udyog Kendra Kolhapur.
2. MSFDA's Academic Leadership Program, February 26 to March 3, 2023
3. IP Awareness/Training program organized by Intellectual Property Office, India 19th Jan 2023.
4. Effective and Efficient Online Teaching in the edge of CORONA : A Hands on Workshop 17/05/2020 to 19/05/2020 Organized by IIT Mumbai
5. Workshop on Electrochemistry for Energy Research and Education -5 to 6th Sept 2018, School Of Nano Science and Technology, SUK.
6. Awareness workshop of UGC-DAE Consortium for Scientific Research; Rajaram College; 20-21st Feb. 2015.
7. Workshop on revised Syllabus of B.Sc. II; 11th Aug. 2014
8. Workshop on revised Syllabus of B.Sc. II, Miraj 6th Aug. 2011
9. One day workshop on Nano-technology, Ichalkaranji 6th Jan. 2011.
10. Short term training course on Initiative of Change, Workshop, organized by Centre for Moral Reorientation Panchagani, 2nd -6th May 2011.
11. National workshop of Utsahi Physics Teachers at IIT KANPUR during 20th-25th May 2010 organized by National Academy of Science and IIT Kanpur.
12. A one day workshop on **Advanced Characterization Techniques** on 6th May 2010 organized by IIT Mumbai.
13. Indo-Russian workshop on SHS being organized by DST, India and Russian Foundation for Basic Research, Russia at IISc, Bangalore during 27-29th No. 2008
14. National Workshop on "Advanced Techniques for Characterization of Nano-Materials" during 28th June to 2nd July 2005 organized by Department of Physics, University of Pune.

13. Research Review

1. Guest editor: Sustainable Energy Technologies and Assessments: special issue proposal on Bio-Energy Conversion Technologies for Sustainability Transition (BEST).
2. Proposal for Mission Mode Project submitted by IITB and TL, Pune to MNRE, New Delhi (26 corers)
3. Worked as reviewer for Journals from Elsevier Science, Springer, Scholarone, RSc publishing.
4. **Ph.D. dissertations** in Physics, Andhra University, Visakhapatnam
5. **Associate editor** of International Journal of Solar Thermal Engineering

14. Life Member of

- a. MRSI.
- b. Indian Society for Materials Chemistry (ISMC), BARC, Mumbai.
- c. Indian Association of Physics Teachers.
- d. **Indian Society of Fuel Cell Technologists (ISOFT)**

15. Invited talk / Resource person/Guest lectures

- i. One day workshop on changed Syllabus in Physics at BSc part III 09/02/2021 DKASC College, Ichalkaranji
- ii. Functionalized Nano-Materials and their Applications: TC College, Baramati, 09/02/2021
- iii. One day online Teacher Workshop on "New Changed Syllabus of (CBCS), B.Sc. Part-III Physics on **24/02/2021** Department of Physics of D. P. Bhosale College, Koregaon
- iv. Delivered lecture on "Funding agencies in India for research projects" FDP by Sydenham Faculty Development Centre, PMMMNMTT, 28th Feb 2020.
- v. Delivered Lecture at STTP on "Recent Trends in Advanced Materials for Engineering and Technology" organized by Govt. College of Engineering, Karad, 12 Nov. May 2019
- vi. Delivered lecture on "How to write research proposal" FDP by Sydenham Faculty Development Centre, PMMMNMTT, 17th Dec. 2018.
- vii. Lectures on "Crystallography" for M.Sc Physics students in UGC sponsored NET Coaching Class by Dept of Physics, Shivaji University, Kolhapur.
- viii. Lectures on "Crystallography" for M.Sc Physics students in UGC sponsored NET Coaching Class by Dept of Physics, Shivaji University, Kolhapur.
- ix. Chief Guest: Valedictory Function of Science Quiz Competitions organized by Shri Vijaysinha Yadav Arts and Science College, Pet Vadgaon, 22nd Aug 2017.
- x. Delivered Lecture at STTP on "Recent Trends in Science for Engineering and Technology" organized by Govt. College of Engineering, Karad, 23-27 May 2016.
- xi. Expert for "Activity based Science Teaching" a pilot project by NYASS trust Dombivali funded by Govt. of Maharashtra, 8th Nov 2014.
- xii. Speech at "I will be Scientists" A one Day Workshop for Science Awareness organized by CONAC, Consortium for Nature Conservators, 17-18 Aug 2014
- xiii. Resource person: Workshop on Revised Syllabus for B.Sc. II Sem III paper VI at Miraj 11th Aug 2014.
- xiv. "Innovative Physics Learning" (One Session) at DST INSPIRE Internship Camp organized by YC College of Science, Karad on 9th Jan. 2014.
- xv. "Women in Science" on the occasion of Women's day on 8th March 2014 at Shri Shahu Chatrapati Adhyapak Vidyalaya, Rukadi.
- xvi. *Intermediate Temperature Solid Oxide Fuel Cell* at World Congress of Nano-S & T-2011 at **World EXPO Center, Dalian, China** organized by Information Research Center of International Talent, China State Administration of Foreign Experts Affairs, and **BIT Life Sciences**, Inc., China.
- xvii. *Biomass Gasification and Waste to energy Conversion* at one week content updating program on "Advances in renewable energy technologies and energy efficiency" ; Amrutvahini Polytechnique, Sangamner 3-7 Jan. 2011
- xviii. *Role of Physics Experiments in popularization of science* at A state level workshop on "Innovativeness in Physics Teaching" organized by Dept. of Physics, Balasaheb Desai College, Patan 5th March 2010
- xix. *Hands-on: Physics Experiments* at Workshop on "Innovative Physics Experiments" Vigyan Prasar, DST, Nyass Trust Patwardhan Highschool, **Ratnagiri** 24-25th April 2010.
- xx. *Energy conservation: need of time at Workshop on medical waste management and energy conservation* [National Conference on

Commercialization of Renewable Energy Technology CRET–2009; 21-23rd Oct. 2009]

xxi. 'Astronomy' at V.S. Khandekar Prashala on 28th Feb. 2009

xxii. Guidance on 'projects for science exhibition' on 19th July 2008.

16. **Government Representative**

1. Government Representative for CAS interviews: Associate Professor and Professor, Shivaji University, Kolhapur
2. Government Observer for B.Ed. CET examination
3. Government Observer for Joint BA- B.Ed. admission process
4. DE representative for assessing five Colleges in Sangli/Miraj
5. DE representative for Physical verification of Students in Colleges

17. **Participation in College Level Committees:**

1. **RUSA Co-ordinator,**
2. **Co-ordinator, Purchase and Fund Utilization Coordinator of E-Tender Committee**
3. Member of following committees
 - a. Ladies Association
 - b. UGC Autonomy
 - c. Central Deadstock
4. Worked as I/C for ladies hostel during June –Dec. 2014 **Ladies Hostel** and member of ladies hostel committee
5. Care Taker for the girls enrolled under **6 MAH BT. NCC** at Kamala College and Commerce College
6. Earlier worked as Co-ordinator/Member of
 - a. **Research Committee** during 2015-18
 - b. Prize Distribution (2014-15 and 2015-16)
 - c. B.Sc. II Admission Committee (2016-17 and 2017-18)
 - d. Personality Development and Placement Cell
 - e. Cultural program
 - f. Campus development
 - g. Parent meet
 - h. Website committee

18. **Organized**

- Organized Awareness workshop on Gravitational Waves, partially funded by IAPT RC08.
- Organized an online lecture series on Exploring fascinating areas of Physics in collaboration with Balasaheb Desai College, Patan and IAPT RC08, 8-10 March 2023.
- International Seminar on Applications of Physics in Biosciences (online) Dr. Juan M. Ruso Prof., Dept. of Physics, University of Santiago de Compostela, Spain: 23/06/2020
- A National Seminar on "Popular lecture series in fascinating areas of Physics" Organized lectures by Dr. Manisha Khaladkar, Associate Professor, Department of Chemistry, College of Engineering, Pune., Dr. V.N. Shinde, Deputy Registrar, Shivaji University, Kolhapur and Dr. Mahesh Shinde Senior Leader/Assistant Manager, Willis Towers Watson (US company), Mumbai 11-12 and 14 June 2021.

- National Seminar on Indian Space Research Programme: Legacy of Dr. Vikram Sarabhai; 28th Dec. 2019
- Organized lead college workshop on “Frontiers in Interdisciplinary Research” on 18th Jan 2018.
- Conducted Academic Audit of “M. P. Patil Mahavidyalaya”, Borgaon 21st June 2017
- Conducted workshop on “ **Familiarization Workshop on Patents and IPR 8th February 2017**”
- Organized lectures on “ **Plagiarism in Research**” on 31st January 2017”
- Organizing secretary of UGC sponsored National Conference on Materials for Future Technology, 26-27th Sept. 2014.

19. Shivaji University, Kolhapur

-  Member of Local Inquiry Committee
 - Miraj Mahavidyalaya, Miraj, 11th Feb 2019
 - KWC Sangli, 15th Feb 2019
-  Govt representative for CAS interviews 28th and 29th Aug 2019.
-  Member of Co-ordinating Committees in Physics, 2013-14