

Department of Physics

Department at a Glance:

- Recognized Ph. D. Research Centre
- UGC funded Research project :
1 Major (Rs. 8,75,800/-) and 1 minor (Rs. 1,30,000/-) research projects are completed
- A research-active environment in a department
- 15 Students have been awarded with the Ph. D Degree
- Implementation of CBCS for U.G. Courses.
- Organized Two National seminars
- Departmental Library for ready reference
- Excellent books collection in the main library
- Lectures of experts for the benefits of the students
- Project is compulsory for T.Y.B.Sc. (Physics) students
- Study tour/Mini projects are compulsory for the students

Faculty Profile:

S.N.	Name	Qualification	Designation	Teaching Experience in Years	No. of Ph.D. Students guided
1.	Dr. H. P. Deshmukh	M.Sc., M.Phil, Ph.D.	Head, Assist. Professor	35	07
2.	Dr. B. N. Pawar	M.Sc., Ph.D.	Asso. Professor	30	07
3.	Mrs. P. K Parmane	M.Sc.	Visiting Lecturer	01	-
4.	Dr. R. S. Gaikwad	M.Sc., Ph.D.	Visiting Lecturer	05	-
5.	Mrs. S. D. Karpe	M.Sc.	Visiting Lecturer	02	-
6.	Mrs. B. M. Umbare	M.Sc.	Visiting Lecturer	03	-

UGC Sponsored National Seminars organized by the Department:

Sr	Name of the event	Level	Dates	Funding Agency
1	"Developments in thin Films Processing and Characterization Technology",	National	8 th - 9 th Oct. 2012	UGC

Thrust Areas For Research:

- Nanomaterials
- Materials science
- Solar cells
- Gas sensors

Publications in the Internal Journals With Impact Factor :- 22

Papers Presented in Conferences : 20

Major Ongoing Research Project Completed at the Department:

S.N	Project Title:	Name of the Researcher	Funded by	Duration	Financial Outlay
1.	Dual Sensitization of Hydrothermally grown TiO ₂ for Efficient Solar Cells”	Dr. H.P. Deshmukh	UGC	01-07-2012 to 30-06-2015	8,75,800/-
2.	‘Synthesis of metal (Zn,Sn,In) oxide thin films by chemical spray and their sensing properties’	Dr.B.N.Pawar	UGC	15-11-2010 to 14-11-2012	1,30,000/-
3.	Investigation of titanium oxide thin films deposited by spray pyrolysis technique and their electrochromic properties	Dr. H.P. Deshmukh	Bharati Vidyapeeth University fund	02-01-2003 to 01-01-2005	35,000/-

Renowned Scholars, Professors, Speaker & Authors who visited the Department...

S.N.	Name of eminent academicians/ Visitors	Designation	Academic Year
1.	Dr. K.C.Mohite	Dean, Faculty of Science, Savitribai Phule Pune University, Pune	2011-2012
2.	Prof. S.R. Jadhkar	School of Energy Studies, Savitribai Phule Pune University, Pune	2011-2012
3.	Prof. Shankar I Patil	Dept. of Physics Savitribai Phule Pune University, Pune	2011-2012
4.	Prof. R.S.Mane	Swami Ramanand Tirth Marathwada University, Nanded	2011-2012
5.	Prof. Ranibal M	Dharwad University, Dharwad, Karnatak	2011-2012
6.	Prof. Ramphal Sharma	Professor,BAM university, Aurangabad	2012-2013
7.	Dr. G.V.Gade	Scientis F, DRDO, Pashan Pune	2012-2013
8.	Prof. R.S.Mane	Swami Ramanand Tirth Marathwada University,	2012-2013

		Nanded	
9.	Dr. Habib Pathan	Dept. of Physics Savitribai Phule Pune University, Pune	2013-2014
10.	Dr. Sartale	Dept. of Physics Savitribai Phule Pune University, Pune	2013-2014
11.	Prof. Shankar I. Patil	Dept. of Physics Savitribai Phule Pune University, Pune	2013-2014
12.	Prof. R.S.Mane	Swami Ramanand Tirth Marathwada University, Nanded	2014-2015
13.	Dr. Habib Pathan	Dept. of Physics Savitribai Phule Pune University, Pune	2014-2015
14.	Dr. K.C.Mohite	Dean, Faculty of Science, Savitribai Phule Pune University, Pune	2014-2015
15.	Prof. S. R. Jadkar	School of Energy Studies , Savitribai Phule Pune University, Pune	2014-2015
16.	Prof. R.S.Mane	Swami Ramanand Tirth Marathwada University, Nanded	2015-2016
17.	Prof. Pramod Vasubmekar	Dept of Electronis, Shivaji University, Kolhapur	2015-2016
18.	Prof. P.S.Patil	Deapt.of Physics, Shivaji University, Kolhapur	2015-2016

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1	"Developments in thin Films Processing and Characterization Technology",	National	8 th - 9 th Oct. 2012	UGC

Ph. D. Research Completed and Ongoing in the Department:

S.N.	Name of Ph. D. Research Scholar	Declaration	Research Guide
2.	Mr. R. T. Jadhav	05-05-2005	Dr. M. S. Sagre
3.	Mr. H. P. Deshmukh	19-10-2005	Dr. P. S. Patil
4.	Mr. A. S. Shaikh	14-09-2009	Dr. R. S. Mane & Dr. B. N. Pawar
5.	Mr. Dhale	30-11-2009	Dr. P. S. Patil
6.	Mr. C. E. Patil	14-12-2009	Dr. P. S. Patil
7.	Mr. P. M. Kadam	14-12-2009	Dr. P. S. Patil & Dr. H. P. Deshmukh
8.	Ms Anmika Sonawane	17-03-2010	Dr. P. S. Patil & Dr. H. P. Deshmukh
9.	Mrs. G. R. Patil	14-05-2014	Dr. B. N. Pawar

10.	Mr. R. S. Gaikwad	18-07-2015	Dr. B. N. Pawar & Dr. R. S. Mane
11.	Mrs. S. H. Pisal	11-08-2015	Dr. P. S. Patil & Dr. H. P. Deshmukh
12.	Mr. M. A. Patil	08-09-2016	Dr. H. P. Deshmukh
13.	Mrs S. S. Shukla	Pursuing	Dr. H. P. Deshmukh
14.	Mr P. P. Atre	Pursuing	Dr. B. N. Pawar
15.	Mr. S. G. Vavale	Pursuing	Dr. H. P. Deshmukh
16.	Ms. Supriya Jagdale	Pursuing	Dr. H. P. Deshmukh

Thrust Areas For Research:

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3.	Investigation of titanium oxide thin films deposited by spray pyrolysis technique and their electrochromic properties	Dr. H.P. Deshmukh	Bharati Vidyapeeth University fund	02-01-2003 to 01-01-2005	35,000/-

Departmental LIBRARY:

Rich collection of text-books and reference books in Central Library:

- Library: 2160 Books (+ 200 books in lab) Offline journal= 04, Online Journal= 20
- Internet facilities for Staff & Students: Available
- Class rooms with ICT facility: Available
- Laboratories: well furnished four laboratories.

PUBLICATIONS IN TE INTERNAL JOURNALS WITH IMPACT FACTOR:- 22

Dr. H. P. Deshmukh

1.	Structural, electrical and optical properties of TiO ₂ doped WO ₃ thin films <i>Applied Surface Science 252 (2005) 1643–1650</i> P.S. Patil , S.H. Mujawar , A.I. Inamdar , P.S. Shinde , H.P. Deshmukh , S.B. Sadale Impact Factor : 3.387
2.	Structural, optical and electrical characterization of spray-deposited TiO ₂ thin films <i>Materials Science and Engineering B 130 (2006) 220–227</i> H.P. Deshmukh, P.S. Shinde , P.S. Patil Impact Factor : 2.38
3.	Properties of mixed molybdenum oxide–iridium oxide thin films synthesized by spray Pyrolysis <i>Applied Surface Science 252 (2006) 8371–8379</i> P.S. Patil , R.K. Kawar , S.B. Sadale , A.I. Inamdar , H.P. Deshmukh Impact Factor : 3.387
4.	Effect of film thickness on electrochromic activity of spray deposited iridium oxide thin films <i>Materials Chemistry and Physics 99 (2006) 309–313</i> P.S. Patil , S.H. Mujawar , S.B. Sadale , H.P. Deshmukh, A.I. Inamdar Impact Factor :2.17
5.	Spray deposited titanium oxide thin films as passive counter electrodes <i>Electrochimica Acta 52 (2007) 3114–3120</i> P.S. Shinde , H.P. Deshmukh, S.H. Mujawar , A.I. Inamdar , P.S. Patil Impact Factor :4.81
6.	Synthesis of electrochromic vanadium oxide by pulsed spray pyrolysis technique and its properties <i>J. Phys. D: Appl. Phys. 42 (2009) 025404 (7pp)</i> C E Patil, N L Tarwal, P S Shinde, H P Deshmukh and P S Patil Impact Factor : 2.588
7.	From beads-to-wires-to-fibers of tungsten oxide: electrochromic response <i>Appl Phys A : Materials Science & Processing. 97 (2009) 323-330</i> P.M. Kadam , N.L. Tarwal , P.S. Shinde , R.S. Patil , H.P. Deshmukh , P.S. Patil Impact Factor : 1.455
8.	Efficient electrochromic nickel oxide thin films by electrodeposition <i>Journal of Alloys and Compounds 489 (2010) 667–673</i> A.C. Sonavane, A.I. Inamdar, P.S. Shinde, H.P. Deshmukh, R.S. Patil , P.S. Patil Impact Factor : 3.133
9.	Simple and rapid synthesis of NiO/PPy thin films with improved electrochromic performance <i>Electrochimica Acta 55 (2010) 2344–2351</i> A.C. Sonavane , A.I. Inamdar , D.S. Dalavi , H.P. Deshmukh , P.S. Patil Impact Factor : 4.81

10.	Multicoloured electrochromic thin films of NiO/PANI <i>J. Phys. D: Appl. Phys.</i> 43 (2010) 315102 (8pp) A C Sonavane, A I Inamdar, H P Deshmukh and P S Patil Impact Factor : 2.588
11.	Enhanced optical modulation due to SPR in gold nanoparticles embedded WO ₃ thin films <i>Journal of Alloys and Compounds</i> 509 (2011) 1729–1733 P.M. Kadam, N.L. Tarwal, P.S. Shinde, S.S. Mali, R.S. Patil , A.K. Bhosale, H.P. Deshmukh, P.S. Patil Impact Factor : 3.133
12.	Electrochromic performance of mixed V ₂ O ₅ –MoO ₃ thin films synthesized by pulsed spray Pyrolysis technique <i>Materials Chemistry and Physics</i> 126 (2011) 711–716 C.E. Patil , P.R. Jadhav, N.L. Tarwal, H.P. Deshmukh, M.M. Karanjkar, P.S. Patil Impact Factor : 2.17
13.	Enhanced electrochromic performance of f-MWCNT-WO ₃ composite <i>Electrochimica Acta</i> 58 (2011) 556– 561 P.M. Kadam, N.L. Tarwal, S.S. Mali, H.P. Deshmukh, P.S. Patil Impact Factor : 4.81
14.	Farming of ZnO nanorod-arrays via aqueous chemical route for photoelectrochemical solar cell application <i>Ceramics International</i> 38 (2012) 6461-6467 S.A. Vanalakar, S.S.Mali, R.C.Pawar, D.S.Dalavi, A.V.Mohalkar, H.P. Deshamukh, P.S.Patil Impact Factor : 3.02
15.	<u>Studies on an antimicrobial activity of metal (Mn, Fe, Co, Ni, Cu) chelates of 1, 2-naphthoquinone 2-oxime</u> <i>International Journal of Chemical Sciences</i> 11 (2013) 1286-1298 SRG Jadhav V.B., Deshmukh H.P., Gonewar N.R., Jadhav K.D. Impact Factor : 0.6
16.	<u>Electrochromic performance of the mixed V₂O₅-WO₃ thin films synthesized by pulsed spray pyrolysis technique</u> <i>Current Applied Physics</i> ; 14 (2014) 389-395 PS Patil C.E., Tarwal N.L., Jadhav P.R., Shinde P.S., Deshmukh H.P Impact Factor : 1.971
17.	<u>Development of Zn₂SnO₄ thin films deposited by spray pyrolysis method and their utility for NO₂ gas sensors at moderate operating temperature</u> <i>Journal of Analytical and Applied Pyrolysis</i> 107 (2014) 233-241 RKY Ganbavle V.V., Patil M.A., Deshmukh H.P. Impact Factor : 3.96
18.	<u>Functionalized Multi-Walled Carbon Nanotubes for Nitrogen Sensor</u> <i>Journal of Applied Chemistry</i> 7 (2014) 49-52 SH Pisal, NS Harale, TS Bhat, HP Deshmukh, PS Patil Impact Factor : 0.16

19.	<u>Electrochromic Properties of Copper Oxide (I) Thin Films</u> Energy and Environment Focus 5 (2014) 195-199 BB Dhale, SH Mujawar, HP Deshmukh, PS Patil
20.	<u>Hydrothermal synthesis of rutile TiO₂ bottle brush for efficient dye-sensitized solar cells</u> Journal of nanoparticle research 16 (2016) 1-11 SS Mali, JV Patil, PM Kadam, HP Deshamukh, CS Shim, PS Patil, ... Impact Factor : 2.020
21.	<u>Synthesis and characterization of zinc stannate thin films prepared by spray pyrolysis technique</u> Journal of Materials Science: Materials in Electronics, DOI 10.1007/s10854-016-4801-1 (2016) 1-6 M.A. Patil, S.H. Mujawar, V.V. Ganbavle, K.Y. Rajpure, H.P. Deshmukh Impact Factor : 2.019
22.	<u>Characterization techniques for TiO₂ thin films</u> Asian Journal of Multidisciplinary Studies 4 (2016)226-229 S. S. Shukla, H.P. Deshmukh

PAPERS PRESENTED IN CONFERENCES

Dr. H. P. Deshmukh

S.No.	Title of the Paper	Conference	Place	Date	Level
1.	Electrochromic Devices Based on WO ₃ Nanostructured Electrode by Pulsed Spray Pyrolysis	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
2.	Electrochromic properties of Au-WO ₃ andf-MWCNT- WO ₃ composites	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
3.	Aqueous chemical growth of nanostructured CdS. thin ifims and their photoelectrochemical performance	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
4.	Electrochromic performance of V2O3- WO ₃ thin films synthesized by pulsed spray pyrolysis technique	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
5.	Studies on TiO ₂ napostructured based solar cells	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International

6.	Switchable Optical Properties of Copper Oxide (I) Thin Films	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
7.	Studies on Self Powered Switchable Smart Windows (558W)	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
8.	CuO-PAA wrapped CNT thin ifims for supercapacitor applications	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
9.	Versatility of ZnO nanostructures grown by a facile Low Temperature Method	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
10.	Antibacterial activity of hydrothermally grown ZnO nanoparticles	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
11.	On the effect of selenium concentration in Cadmium Selenide thin Film	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
12.	Layer by layer deposition of zinc oxide thin films for LPG sensor	Physics of Materials and Materials Based Device Fabrication	Shivaji University Kolhapur	17 th to 19 th Jan., 2012	International
13.	Optical Band Gap Widening of P-Type Cu ₂ Films By Boron Doping	Nanotechnology and Advanced Functional Materials	National Chemical Lab.Pune	July 09-11, 2009	International
14.	Electrochromic Performance of Nickel Oxide/Polyaniline Composite Films	Nanomaterials & Applications	Shivaji University Kolhapur	Dec. 09-11, 2008	International
15.	Switchable optical properties of Copper and Copper Oxide Thin Films	Nanomaterials & Applications	Shivaji University Kolhapur	Dec. 09-11, 2008	International
16.	Electrochromic Properties of Vanadium Oxide Thin Films by Pulsed Spray Pyrolysis Technique	Nanomaterials & Applications	Shivaji University Kolhapur	Dec. 09-11, 2008	International
17.	Effect of Au Nanoparticles and CNTs on Electrochromic WO ₃ Thin Films Synthesized by Pulsed Spray Pyrolysis Technique	Nanomaterials & Applications	Shivaji University Kolhapur	Dec. 09-11, 2008	International

18.	<u>Electrochromic properties of vanadium oxide thin films prepared by PSPT: Effect of substrate temperature</u>	AIP Conference Proceedings 1536 (2013) 517-518	Bikaner, Rajasthan, India	1-2 February 2013	International
19.	<u>Chemical functionalization of carbon nano tube</u>	AIP Conference Proceedings 1536 (2013)249.	Bikaner, Rajasthan, India	1-2 February 2013	International
20.	Growth of Vanadium Oxide (V_2O_5) Thin Films by Intermittent Spray Pyrolysis Technique	National Seminar on New Horizons in Physics	Yashwantrao Chavan Institute of Sci., Satara	Jan. 20-21, 2007	National

HONOURS :

Dr. H. P. Deshmukh

- 1) Bharati Vidyapeeth University, Pune has felicitated with a '**Gold Medal**' due to the **Excellent Research work at Ph. D. level** on Saturday 29th April, 2006 (Seventh Convocation of Bharati Vidyapeeth Deemed University, Pune)
- 2) Bharati Vidyapeeth, Pune has felicitated with a '**Seva Gaurav Puraskar**' on 10th may, 2011.
- 3) Bharati Vidyapeeth University, Pune has felicitated with a '**Outstanding Researcher, 2011-12**' on 26th April, 2012 due to the **Excellent Research Work Published in Reputed International Journal.**
- 4) **Pune Municipal Corporation Pune** has felicitated with a '**Shikshak Gaurav Puraskar**' on 5th September, 2012.
- 5) **Selection as team member for MoU** between Chonnam National University, South Korea and Bharati Vidyapeeth University, Pune on 21/10/2013



MoU between Chonnam National University, South Korea and Bharati Vidyapeeth University, Pune on 21/10/2013