

Curriculum Vitae



Dr. Shivaji Babaso Sadale

M. Sc., B. Ed., D.C.P., Ph. D.
JSPS Fellow,
Marie Curie Fellow

Shivaji University, Kolhapur-416 004

Maharashtra, India

1. Name: Dr. S. B. Sadale,**Designation: Director, International Affairs Cell,****Associate Professor in Physics, Shivaji University, Kolhapur,
M.S. India-416 004.****2. Educational Qualifications:**

Sr. No.	Course Name	Subject with specialization	Year of Passing	Name & Address of the University awarding Certificate / Degree
1.	B.Sc.	Physics	1997	Shivaji University, Kolhapur
2.	D.C.P.	Programming languages, database	1998	Shivaji University, Kolhapur
3.	M.Sc.	Physics (Materials Science)	2000	Shivaji University, Kolhapur
4.	B.Ed.	Sci. & Mathematics Teaching Methodology	2001	Shivaji University, Kolhapur
5.	Ph. D.	Physics	2006	Shivaji University, Kolhapur

3. Research Interest: Materials Science, Nanomaterials, Photocatalysis, Electrochromic Materials, Energy Technologies, Hydrogen Production and Storage, CO₂ conversion, Thermoelectric Materials.**4. Research Experience: 21 Years****5. Teaching Experience: 20 Years**

Designation	From	To	Years	Classes taught	Name & Address of the Institution
Lecturer	July 2008	March 2009	1 Year	Physics	G. H. Raison Institute of Engineering & Technology, Pune, Maharashtra, India.
Assistant Professor	02/04/2012	01/04/2016	4Years	B. Tech. & M. Tech.	Dept. of Technology, Shivaji University, Kolhapur
Assistant Professor (11)	02/04/2016	01/04/2021	5 Years	B. Tech. & M. Tech.	Dept. of Technology, Shivaji University, Kolhapur
Assistant Professor (12)	02/04/2021	26/09/2024	3Years	B. Tech. & M. Tech.	Dept. of Technology, Shivaji University, Kolhapur
Associate Professor	27/09/2024	Till date	3Years	B. Tech. & M. Tech.	Dept. of Technology, Shivaji University, Kolhapur
Global Professor	2023	2024	1 Year	Engineering Science	Keio University, Japan

6. Other Experiences:

Designation	From	To	Years	Name & Address of the Institution
Junior Research Fellow (J.R.F.)	14/08/2001	14/08/2003	2 Years	Department of Physics, Shivaji University, Kolhapur, India
Senior Research Fellow (S.R.F.)	15/08/2003	31/08/2004	1 Year	Department of Physics, Shivaji University, Kolhapur, India
CSIR-S.R.F.	01/04/2005	31/08/2006	16 months	Department of Physics, Shivaji University, Kolhapur, India
POSTDOCTORAL FELLOW	01/09/2005	31/01/2007	17 months	Groupe d'Etude de la Matière Condensée, C.N.R.S., Meudon CEDEX, France
Marie Curie Fellow	01/03/2007	31/12/2007	10 months	Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology (FORTH), Hellas, Greece.
JSPS Fellow	01/04/ 2009	30/04/2011	2 Years	Department Of Electronic Science and Engineering, Kyoto University, JAPAN.
Researcher	01/05/2011	31/03/ 2012	1Year	Department Of Electronic Science and Engineering, Kyoto University, JAPAN.
Training and Placement Officer	24/07/2014	09/11/2022	8 Years	Department of Technology, Shivaji University, Kolhapur
Coordinator, Ph. D. Cell (Engineering & Technology)	11/08/2018	12/02/2024	6 Years	Department of Technology, Shivaji University, Kolhapur
Director, Intellectual Property Rights Cell	22/10/2021	07/10/2024	3 Years	Shivaji University, Kolhapur
Director, International Affairs Cell	28/09/2022	Till Date		Shivaji University, Kolhapur

7. Research Guidance

- **UG Programs: B. Tech. and B. Sc.**
- **PG Programs: M. Tech. and M. Sc.: 10**
- **Ph.D.: 01 Awarded and 06 working**
- **Visiting Professor at Keio University, Japan**

8. Research Publications: 82

i. Citation data

SCOPUS Report (Numbers Only)			Google Scholar Citation Report (Numbers only)				No. Other Pub.
Pub.	Citations	<i>h</i> - index	Pub.	<i>h</i> - index	<i>i</i> 10- Index	Citations	
56	1071	19	82	21	38	1502	5

ii. List of Publications:

A. International Peer-Reviewed Publications

Sr. No.	Name of Author/s	Year	Title of the Paper	Name of the journal	Vol .	Page Nos.	Impact Factor	Citations
1.	P. S. Patil, E. A. Ennaoui, S. Fiechter, H. Tributch & S. B. Sadale	2003	Formation of Textured WS ₂ thin films by Van Der Waals Rheotaxy Process and Their Photoactivity	Indian Journal of Pure and Applied Physics	41	369 - 373	0.653	
2.	P.S. Patil, R.K. Kawar, S. B. Sadale , and P.S. Chigare	2003	Properties of spray deposited tin oxide thin films derived from tri-n-butyltin acetate	Thin Solid Films	437	34 - 44	2.030	
3.	P.S. Patil, P.S. Chigare, S. B. Sadale , and R.K. Kawar	2003	Thickness dependent properties of sprayed iridium oxide thin films	Materials Chemistry and Physics	80	667 - 675	3.408	
4.	P. S. Patil, P. V. Kumbhar, M. M. Jawale, P. S. Shinde, S. B. Sadale and P. S. Chigare	2003	Growth of Undoped SnO ₂ Thin Films from Tri-Butyltin Acetate and Their Electroanalysis: Effect of Substrate Temperature	Proceedings of the 12 th Inter. Workshop on The Physics of Semi. Devices	1	146 - 148		
5.	S.B.Sadale and P.S.Patil	2004	Nucleation and Growth of Bismuth Thin Films onto Fluorine Doped Tin Oxide (FTO) Coated Conducting Glass Substrates from Nitrate Solutions	Solid State Ionics	167 / 3-4	273 - 283	3.107	
6.	P.S. Patil, S.B. Sadale and R.K. Kawar	2004	Electroanalysis of Spray Deposited Pristine Iridium Oxide and Molybdenum Doped	Proceedings of Int. Conf. on Electroanal.	1	277 - 282		

			Iridium Oxide Thin Film Coatings and their Electrochromism	Chemistry & Allied Topics (ELAC-2004), at, Goa				
7.	P. S. Patil, A. R. Patil, S. H. Mujawar and S. B. Sadale	2005	Properties of Spray Deposited Niobium Oxide Thin Films	Journal of Materials Science	16-1	35 - 41	3.553	
8.	P. S. Patil, R. K. Kawar and S. B. Sadale	2005	Electrochromism in Spray Deposited Iridium Oxide Thin Films	Electrochimica Acta	50	2527 - 2532	6.215	
9.	P. S. Patil, R. K. Kawar and S. B. Sadale	2005	Effect of Substrate Temperature on Electrochromic Properties of Spray Deposited Ir-Oxide Thin Films	Applied Surface Science	249	367 - 374	6.182	
10.	P. S. Patil, S. H. Mujawar, A. I. Inamdar and S. B. Sadale	2005	Electrochromic Properties of Spray Deposited TiO ₂ -doped WO ₃ Thin Films	Applied Surface Science	250	117 - 123	6.182	87
11.	P.S. Patil, S. H. Mujawar, A. I. Inamdar, P.S. Shinde, H.P. Deshmukh and S. B. Sadale.	2005	Structural, Electrical and Optical Properties of TiO ₂ doped WO ₃ Thin Films	Applied Surface Science	252 /5	1643 - 1650	6.182	77
12.	S.B. Sadale and P.S. Patil	2006	Synthesis of TYPE-I Textured Tungsten Disulfide Thin Films on quartz substrate	Journal of Crystal Growth	286	481 - 486	1.632	30
13.	P.S. Patil, R.K. Kawar, S.B. Sadale , A.I. Inamdar and S.S. Mahajan	2006	Promotion of Electrochromism in Spray Deposited Molybdenum Oxide Doped Iridium Oxide Thin Films	Solar Energy Materials and Solar Cells	90	1629 - 1639	6.984	29
14.	S.B. Sadale and P.S. Patil	2006	Synthesis and characterization of type-II textured tungsten disulfide thin films by vdWR process with Pb interfacial layer as texture promoter	Journal of Crystal Growth	290	363 - 368	1.632	20
15.	P. S. Patil, R. K. Kawar, S. B. Sadale , A. I. Inamdar, H.P. Deshmukh	2006	Properties of Mixed Molybdenum Oxide-Iridium Oxide Thin Films Synthesized by Spray Pyrolysis	Applied Surface Science	252	8371 - 8379	6.182	06

16.	P. S. Patil, R. K. Kawar and S. B. Sadale	2006	Effect of film thickness on Electrochromic activity of Spray Deposited Iridium Oxide Thin Films	Materials Chemistry and Physics	99/2-3	309 - 313	3.408	22
17.	S.B. Sadale , S. R. Barman and P.S. Patil	2007	Formation of $\perp c$ texture of tungsten disulfide thin films with nickel	Applied Surface Science	253	3489 - 3495	6.182	18
18.	S.B. Sadale and P. S. Patil	2007	Preparation and Characterization of Type-II Textured WS ₂ Thin films on Bi-Coated Quartz Substrates	Thin Solid Films	515	2935 - 2942	2.030	
19.	P.S. Patil, P.S. Chigare, S.B. Sadale , S.H. Mujawar and P.S. Shinde	2007	Electrochemical investigations on spray deposited tin oxide thin films	Solar Energy Materials and Solar Cells	91	859 - 863	6.984	
20.	A.I. Inamdar, S.H. Mujawar, S.B. Sadale , A.C. Sonavane, M.B. Shelar, P.S. Shinde and P.S. Patil	2007	Electrodeposited zinc oxide thin films: Nucleation and growth mechanism	Solar Energy Materials and Solar Cells	91	864 - 870	6.984	76
21.	P.S. Patil, S. B. Sadale , S.H. Mujawar, P.S. Shinde and P.S. Chigare	2007	Synthesis of electrochromic tin oxide thin films with faster response by spray Pyrolysis	Applied Surface Science	253	8560 - 8567	6.182	36
22.	S.B. Sadale , S.M. Chaqour, O. Gorochov, and M. Neumann-Spallart	2008	Photoelectrochemical and physical properties of tungsten trioxide films obtained by aerosol pyrolysis	Journal Materials Research Bulletin	43-6	1472 - 1479	4.019	35
23.	P.S. Shinde, S.B. Sadale , P.S. Patil, P.N. Bhosale, A. Brüger, M.N. Spallart, C.H. Bhosale	2008	Photoelectrochemical and physical properties of spray deposited titanium oxide thin films	Solar Energy Materials and Solar Cells	92-3	283 - 290	6.984	32
24.	P. Horvath, M. Sucheá, S.B. Sadale , S. Christoulakis, R. Voicu, C.Tibeica, I. Bineva, R.Muller, T. Kitsopoulos and G. Kiriakidis	2008	ZnO thin films for cantilever coatings: structural and mechanical properties, observations of photoplastic effect	Sensor letters	6	1-6	0.60	02
25.	S.B. Sadale and M. Neumann-Spallart	2010	Photoelectrocatalysis with Drop-Cast Tungsten Trioxide Films	Journal of New Materials for	13-2	127-131	0.333	

				Electrochemical Systems				
26.	Shivaji B. Sadale, Kei Noda, Kei Kobayashi, and Kazumi Matsushige	2011	Hydrogen production from gas phase photocatalytic decomposition of methanol using Pt-supported nanocrystalline WO ₃ films	physical status solidi-c	8-2	552–554	2.120	
27.	Shivaji B. Sadale, Kei Noda, Kei Kobayashi, Hirofumi Yamada and Kazumi Matsushige	2011	Intricate Photocatalytic Decomposition Behavior of Gaseous Methanol with Nanocrystalline Tungsten Trioxide Films in High Vacuum	Applied Surface Science	257	1030 – 10305	6.182	
28.	S. B. Sadale, K. Noda, K. Kobayashi, H. Yamada & K. Matsushige	2012	time Investigation On Photocatalytic Oxidation of Gaseous Methanol with Nanocrystalline WO ₃ -TiO ₂ Composite Films	Thin Solid Films	520 / 10	3847 - 3851	2.030	
29.	A. B. Kolekar A.B. Dayte C. H. Bhosale S.B. Sadale	2013	BIO-FUEL-DI-ETHYL ETHER (DME): A REVIEW	J. of Int. Academic Research for Multidisciplinary	1-3	136 - 142	0.792	
30.	D S. Dalavi, R S. Devan, R.A. Patil, R. S. Patil, Y.-R.Ma, S. B. Sadale, InY. Kim, Jin-H.Kim and P. S. Patil	2013	Efficient electrochromic performance of nano particulate WO ₃ thin films	Journal of Materials Chemistry C	1 (23)	3722 - 3728	7.059	144
31.	S. S. Mali, H, Kim, C, Su Shim, W. Ri Bae, N. L. Tarwal, S. B. Sadale,c P.S. Patil, Jin-H.Kim and C.K.Hong	2013	Single-step synthesis of 3D nanostructured TiO ₂ as a scattering layer for vertically aligned 1D nanorod photoanodes and their dye-sensitized solar cell properties	CrystEngComm	15	5660 – 5667	3.117	
32.	N.L. Tarwal, K.V. Gurav, S.H. Mujawar, S.B. Sadale, K.W. Nam, W.R. Bae, A.V. Moholkar, J.H. Kim, P.S. Patil, J.H. Jang	2014	Photoluminescence and photoelectrochemical properties of the spray deposited copper doped zinc oxide thin films	Ceramics International	40-6	7669 – 7677	3.830	

33.	A. B. Kolekar, A.B. Dayte, C. H. Bhosale, S. B. Sadale	2014	Di-Methyl Ether (DME): As a fossil energy carrier	Proceedings of 20 th World Hydrogen Energy Conference ISBN:978-1-63439-655-4	3	1555 - 1559		
34.	A. B. Kolekar, A.B. Dayte, C. H. Bhosale, S. B. Sadale	2016	COMPARISON OF COMPRESSION IGNITION ENGINE PERFORMANCE FUELLED BY LIQUEFIED PETROLEUM GAS AND DIESEL	International Journal of Mechanical Engineering and Technology (IJMET)	7-6	388 - 398	0.29	
35.	H. P. Salunkhe, S. B. Sadale , S. D. Thikane	2018	Mathematical Modelling of Electrorheological Damper in Semiactive Suspension	Mathematical Sciences International Research Journal	vol. 7 (5)	67-69	3.97	
36.	H. P. Salunkhe, S. B. Sadale , S. D. Thikane	2019	Lagrangian Equation of Motion for Magnetorheological Fluids	Mathematical Sciences International Research Journal	9	79-82	2.73	
37.	S. Bansode, R. C. Ranveer, A. R. Tapre, P. M. Ganorkar, S. B. Sadale and A. K. Sahoo	2019	Enzymatic Clarification and Preservation of Aloe vera Juice by Ohmic Heating	Current J. Applied Science and Technology	35(6)	1-9	0.13	
38.	Hikaru Masegi , Sakiko Imai, Shivaji B. Sadale , and Kei Noda	2020	All-electrochemical fabrication of α -Fe ₂ O ₃ nanotube array/Cu ₂ O composites toward visible-light-responsive photocatalysis	Japanese Journal of Applied Physics	59	065503	1.376	
39.	Shital Patil, S. B. Sadale , R. C. Ranveer	2020	Quality Assessment of Bumble Bee Species Nectar in Western Maharashtra of India	Advances in Research	21 (2)	31-37	6.25	
40.	S. B. Sadale , M. Neumann- Spallart	2020	Drop- Cast Tungsten Trioxide Semiconducting Films in Photoelectrocatalysis	Journal of Electroanalytical Chemistry	877	114502	3.807	
41.	H. P. Salunkhe, S. B. Sadale , S. D. Thikane	2019	Lagrangian Equation of Motion for Magnetorheological Fluids	Mathematical Sciences International Research Journal	09	73-85	2.7	

42.	HikaruMagesi, HayatoGoto, Shivaji B. Sadale and Kei Noda	2020	Real-time Monitoring of Photocatalytic Methanol Decomposition over Cu ₂ O- loaded TiO ₂ Nanotubes Arrays in High Vacuum	Journal of Vacuum Science & Technology B	38	0524 01	1.3	
43.	Swapnali P. Rajmane, Pratiksha D. Donolikar, V. A. Sawant, and S. B. Sadale	2020	Thermoacoustic Investigations on Nanofluids	AIP Conference Proceedings	226 9	0300 75	0.7	
44.	Pratiksha Donolikar, Seema Patil, Shivaji Sadale, Jungho Ryu, Deepak Patil	2021	Redox-active electrolyte-based MnWO ₄ //AC asymmetric supercapacitors	Journal of Materials Science: Materials in Electronics	32	8054 – 8063	2.8	
45.	Sushant B. Patil, Shivaji B. Sadale	2022	Size-dependent electrochemical kinetics of nano-granular WO ₃ thin films	Solar Energy Materials and Solar Cells	245	1118 49	6.3	
46.	Shivaji B. Sadale , Sushant B. Patil, Aviraj M. Teli, HikaruMasegi, Kei Noda	2022	Effect of deposition potential and annealing on performance of electrodeposited copper oxide thin films for supercapacitor application	Solid State Sciences	123	1067 80	3.4	
47.	A.M. Teli, S.A. Beknalkar b, S.M. Mane a, T.S. Bhat, B.B. Kamble, S.B. Patil, S.B. Sadale , J.C. Shin	2022	Electrodeposited crumpled MoS ₂ nanoflakes for asymmetric supercapacitor	Ceramics International	48	2900 2- 2901 0	5.1	
48.	Hayato Goto, Hikaru Masegi, Shivaji B. Sadale , Kei Noda	2022	Intricate behaviors of gas phase CO ₂ photoreduction in high vacuum using Cu ₂ O-loaded TiO ₂ nanotube arrays	Journal of CO ₂ Utilization	59	1019 64	7.2	
49.	Teja M. Patil, Aravind H. Patil, Mokurala Krishnaiah, Dhananjay Mishra, Ajit Kumar, Niraj Kumar, Vijay D. Chavan, Deok-Kee Kim, Sushant B. Patil, Shivaji B. Sadale , Raviraja T.	2023	Enhanced electrochemical performance of CuCo ₂ O ₄ nanowire arrays based solid-state symmetric supercapacitor by K ₃ [Fe(CN) ₆] redox additive electrolyte	Journal of Energy Storage	63	1069 45	8.9	

	Patil, Vijay J. Fulari, Sung Hun Jin, Vibhavari P. Malekar							
50.	S. S. Mali, J. V. Patil, S. B. Sadale , C. K. Hong	2023	Understanding the Synergetic Influence of Propylammonium Bromide Additive and Erbium Doped CsPbI ₂ Br for Highly Stable Inorganic Perovskite Solar Cells	Inorganic Chemistry Frontiers	10	3213 - 3223	6.1	
51.	H. P. Salunkhe, S. Thikane, S. B. Sadale	2023	Magnetorheological Damper and Its Applications: Current Scenario and Future Prospects	Romanian Journal of Acoustics and Vibration	20	20- 29	0.7	
52.	Lahu H. Kathwate, Sushant B. Patil, Yash S. Mane, Shivaji B. Sadale , Vishwanath D. Mote	2023	Effect of annealing temperature on supercapacitive performance of SILAR-grown Mn ₃ O ₄ nanoflakes	Journal of Energy Storage	71	1081 96	8.9	
53.	Dipali Potdar, Sushant Patil, Yugen Kulkarni, Niketa Pawar, Shivaji Sadale , Prashant Chikode	2023	Synthesis and Characterizations of Ni -W Alloy	Iranian Journal of Materials Science and Engineering	21	1		
54.	S. P. Rajmane, B. D. Vhanmore, S. B. Sadale , S. D. Patil, M. V. Takale	2024	A comparative study of extraordinary and ordinary modes in the presence of external magnetic field in self-focusing of higher-order mode TEM of elegant Hermite-cosh-Gaussian laser beams in collisionless plasma medium	Journal of Optics		1-9	2.0	01
55.	B. D. Vhanmore, S. P. Rajmane, S. B. Sadale , S. D. Patil, H. M. Shinde, R. J. Kamble, M. V. Takale	2024	Dominance of polarization modes and absorption on self-focusing of laser beams in collisionless magnetized plasma	Journal of Nonlinear Optical Physics & Materials		2450 008	2.9	04
56.	Bandopant D Vhanmore, Swapnali P Rajmane, Sandip D Patil, Shivaji B Sadale , Mansing V Takale	2024	Dominance of polarization modes and external magnetic field on self-focusing of laser beams in collisionless magnetized plasma	Journal of Optics		1-8	2.0	04

57.	Suhas H Sutar, Sushant B Patil, Love Bansal, Shivaji B Sadale , Rajesh Kumar, Sarfraz H Mujawar	2024	Electrochemical and Impedance Analysis of Nickel Oxide Nanoflakes-based Electrodes for Efficient Chromo Supercapacitors	Electrochimica Acta	498	1446 14	5.5	03
58.	BD Vhanmore, SP Rajmane, SB Sadale , SD Patil, MV Takale	2024	A comparative study of extraordinary and ordinary modes in self-focusing of elegant Hermite Cosh-Gaussian laser beams in a collisionless magnetized plasma	AIP Conference Proceedings	314 9		0.7	1
59.	Vaishnavi Hubale, Ankita Dalvi, Omkar Nille, Shivaji Sadale , Govind Kolekar, Vaishali Sawant	2024	Zn (II)/Cd (II) MOFs based on 2, 5-thiophene carboxylic acid and bis (Imidazole) linkers for highly selective and sensitive detection of Fe ³⁺ and Cr ₂ O ₇ ²⁻	Journal of Molecular Structure	131 9	1394 08	4.0	01
60.	Sushant B Patil, Sachin V Desarada, Aviraj M Teli, Sreedevi Vallabhapurapu, Jae Cheol Shin, Shivaji B Sadale	2024	Nucleation, growth mechanism, and bifunctional electrochromic supercapacitive properties of NiO thin films	Ceramics International	50	5610 9- 5612 2	5.1	01
61.	Radhika S Desai, Vinayak S Jadhav, Pritam J Morankar, Sushant B Patil, Shivaji B Sadale , Sidharth R Pardeshi, Divya D Lad, Pramod S Patil, Chan-Wook Jeon, Dhanaji S Dalavi	2024	Hydrothermal synthesis of self-supported hierarchical microflowers of Co ₃ O ₄ nanowires for potential supercapacitor application	Journal of Electroanalytical Chemistry	976	1188 00	4.1	03
62.	Bandopant D Vhanmore, Swapnali P Rajmane, Shivaji B Sadale , Sandip D Patil, Harish M Shinde, Ravi J Kamble, Pratapsingh V Gaikwad, Kalyani Y Khandale, Mansing V Takale	2024	Combined effect of absorption coefficient, polarization modes and decentred parameter on self-focusing of cosh-Gaussian laser beams with collisionless magnetized plasma	Journal of Nonlinear Optical Physics & Materials		2450 038	2.9	

63.	Hayato Goto, Kosei Ito, Shivaji B Sadale , Kei Noda	2024	Gas Phase CO ₂ Photoreduction Behaviors over Composites of Galvanostatically Pulse-Deposited Cu ₂ O Nanoparticles and Anodized TiO ₂ Nanotube Arrays	Advanced Engineering Materials		2302 249	3.4	
64.	Swapnali P Rajmane, Bandopant D Vhanmore, Shivaji B Sadale	2025	Thermoacoustic Properties of Nanofluids by Ultrasonic Interferometer for Heat Transfer System	Physica B: Condensed Matter	-	4181 22	3.8	
65.	Dipali G. Potdar, Sushant Patil, Yugen Kulkarni, Niketa Pawar, Swapnil Banne, Shivaji Sadale , Prashant Chikode	2025	Studies on nucleation and growth kinetics during electrodeposition of nickel thin films	Discover Electrochemistry	3	29	-	
66.	Dipali G. Potdar, Balachandra G. Hegde, Shivaji Sadale , Prashant P. Chikode	2026	Controlled Nucleation and Growth of CoNiW Alloys Thin Films for Anisotropic Magnetic Properties	Journal of Alloys and Compounds			6.3	Under Review

B. Books Chapters: 04

1	Shivaji B. Sadale and George Kiriakidis	2009	Material Growth and Fundamental Material Characterization Techniques	NATO Science for Peace and Security Series C: Environmental Security, Sensors for Environment, Health and Security, published by Springer	I, 47-66,
2	George Kiriakidis, Konstantinos Moschovis and Shivaji B. Sadale	2009	Systems and Set-Ups for Effective Sensing Response Applications	NATO Science for Peace and Security Series C: Environmental Security, Sensors for Environment, Health and Security, published by Springer	I, 159-178,
3	Shivaji B. Sadale	2016	Resistive Switching Memory Devices Based on Metal Oxide Nanostructures	Better Books Publishing house	106-112
4	Nigar K Mujawar, Babaso V Udugade, Ganesh D Mote, Shivaji B Sadale ,	2025	Nanomaterials for Engineering Applications	Green Technology and Smart Materials for Engineering Applications	188

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C. Details of IPR: 19 (02-granted Patents +17 Filed and Published)

Sr. No.	Patent Title	Name of Applicant(s)	Patent Application No.	Grant Year	Agency/ Country	Status
1.	AN IMPROVED SPRAY PYROLYSIS PROCESS FOR THE PREPARATION OF GOOD QUALITY THIN FILM SEMICONDUCTING COATING APPARATUS THEREFOR	S. B. Sadale and P. S. Patil	214163	2004	INDIAN PATENT	Granted
2.	A PROCESS FOR THE SYNTHESIS OF TUNGSTEN DISULFIDE THIN FILMS COMPRISING LARGE AREA TEXTURED RHOMBOHEDRAL CRYSTALLITES USING LEAD PROMOTER LAYER	S. B. Sadale and P. S. Patil	206142	2005	INDIAN PATENT	Granted
3.	MICROWAVE DEVICE FOR MEASURING WATER CONTENT OF SOIL	Dr. U. L. Bombale, S. B. Sadale	201921053639	--	INDIAN PATENT	Published
4.	A METHOD TO PREDICT THE EFFICIENCY OF TANDEM SILICON SOLAR CELLS USING ARTIFICIAL NEURAL NETWORK(ANN)	Mrs. S.V. KATKAR, Prof. R. K. KAMAT, Mr. K.G. KHARADE, Dr. S.B. SADALE	201921053638	--	INDIAN PATENT	Published
5.	SECURING ROUTING PROTOCOL FOR MOBILE AD-HOC NETWORK(MANET)	Dr. S. S. Gaikwad, Dr. V.R. Ghorpade, Dr.R. K. Kamat, Dr. S. B. Sadale	201921053931	--	INDIAN PATENT	Published
6.	ANN BASED METHOD FOR PREDICTION AND EFFICIENCY OF CZTS SOLAR CELLS	Mr. K. G. Kharade, Dr. R. K. Kamat, Mrs. S. K. Kharade, Dr. R. R. Mudholkar, Dr. S. B. Sadale	201921053633	--	INDIAN PATENT	Published
7.	A NANOFUID BASED HEAT EXCHANGER SYSTEM ADOPTED TO REGULATE AND UTILIZED WASTE HEAT IN THE FORM OF STEAM, HOT WATER, HOT AIR	Dr. S. B. Sadale	201921047451	--	INDIAN PATENT	Published
8.	A POT TYPE GHEE DISPENSER	Dr. S. B. Sadale	202021002733	--	INDIAN PATENT	Published
9.	DESIGN OF HIGHER EFFICIENCY PEROVSKITE SOLAR CELLS USING	Mr. K. G. KHARADE, Prof. R. K.	202021002743	--	INDIAN PATENT	Published

	ARTIFICIAL NEURAL NETWORK	Kamat, Mrs. S. K. Kharade, Mrs. S. V. Katkar, Dr. S. B. Sadale				
10.	AN INTELLIGENT METHOD TO PREDICT PROPERTIES OF ELECTROCHROMIC SMART WINDOWS	Mrs. S. V. Katkar, Prof. R. K. Kamat, Dr. K. G. Kharade, Mr. S. B. Patil, Dr. S. B. Sadale	202021002737	--	INDIAN PATENT	Published
11.	ARTIFICIAL NEURAL NETWORK (ANN) BASED METHOD FOR PREDICTION OF VARIOUS PARAMETERS OF Cd(SSe) SOLAR CELL	Mrs. S. V. Katkar, Prof. R. K. Kamat, Dr. K. G. Kharade, Dr. S. B. Sadale	202021002735	--	INDIAN PATENT	Published
12.	COMPUTATIONAL MODELLING METHODS FOR FABRICATION OF THERMISTORS	Mr. K. G. KHARADE, Dr. R. K. Kamat, Mrs. S. K. Kharade, Mrs. S. V. Katkar, Dr. S. B. Sadale	202021002741	--	INDIAN PATENT	Published
13.	ANN BASED SMART CALCULATION TECHNIQUE FOR VARIOUS PARAMETERS OF Bi(S _{1-x} Se _x) SOLAR CELL	Mrs. S. V. Katkar, Dr. R. K. Kamat, Dr. K. G. Kharade, Dr. S. B. Sadale	202021004253	--	INDIAN PATENT	Published
14.	AN ELEGANT WAY OF CALCULATING CHARGE CAPACITY USING ANN FOR LITHIUM-ION BATTERIES	Mrs. S. K. Kharade, Prof. R. K. Kamat, Dr. K. G. Kharade, Mrs. S. V. Katkar, Dr. S. B. Sadale	202021004254	--	INDIAN PATENT	Published
15.	A PROCESS FOR THE SYNTHESIS OF TUNGSTEN DISULFIDE THIN FILMS COMPRISING LARGE AREA TEXTURED HEXAGONAL CRYSTALLITE NICKEL PROMOTER LAYER	P. S. Patil and S. B. Sadale		--	INDIAN PATENT	Published
16.	NANOFLUID-BASED HEAT EXCHANGER	Shivaji University, Kolhapur, Swapnali P. Rajmane, Shivaji B. Sadale , Bandopant D. Vhanmore	438611-001 (Design)	--	INDIAN PATENT	Published
17.	BIFUNCTIONAL ELECTROCHROMIC ENERGY STORAGE DEVICE	Shivaji University, Kolhapur, Sushant B. Patil, Shivaji B.	438746-001 (Design)	--	INDIAN PATENT	Published

		Sadale,				
18.	A METHOD FOR THE SYNTHESIS OF CADMIUM BASED METAL ORGANIC FRAMEWORK (Cd-MOF) FOR ADSORPTION OF INDUSTRIAL DYES.	Shivaji University, Kolhapur, Ankita N. Dalavi, Shivaji B. Sadale , Vaishali A. Sawant	202521131669	--	INDIAN PATENT	Published
19.	SOFT MAGNETIC FeNiW ALLOY THIN FILMS FOR APPLICATIONS IN SENSOR DEVICES	Shivaji University, Kolhapur, Dipali G. Potdar, Shivaji B. Sadale , Prashant P. Chikode	202621045136	--	INDIAN PATENT	Filed

9. Conferences Participated

a. National/International

1. Participated and presented a poster in the 10th AGM of the Material Research Society of India (MRSI) at the NCL, Pune, INDIA during Feb.10-12, 2005.
2. Participated in E-MRS-spring meeting, Strasbourg, France, May 28th to June 1st, 2007.
3. Participated and presented a paper entitled, "Hydrogen production using nanocrystalline WO₃ films loaded with platinum with gas phase photocatalysis", in the 57th Spring Meeting of The Japan Society of Applied Physics (JSAP), March 17 - 20, 2010, at Tokai University, Kanagawa, Japan.
4. Participated and presented a paper entitled, "Hydrogen Production from Gas Phase Photocatalytic Decomposition of Methanol using Pt. supported Nanocrystalline WO₃ Films", in "The 37th International Symposium on Compound Semiconductors" (ISCS, 2010) May 31 - June 4, 2010, Takamatsu Symbol Tower, Kagawa, Japan.
5. Participated and presented a paper entitled "Photocatalytic Decomposition of Gaseous Methanol with Nanocrystalline Tungsten Trioxide Films in High Vacuum", in the 3rd International Symposium on Transparent Conductive Materials (TCM-2010) at Crete Greece during 17-21 October 2010.
6. Participated and presented a paper entitled, "Hydrogen Production Using Gas Phase Photocatalysis with Nanocrystalline TiO₂-WO₃ Composite Films in the 15th International Conference on TiO₂ Photocatalysis: Fundamentals and Applications (TiO₂-15), November 15-18, 2010, San Diego, California, USA.
7. Participated and presented a paper entitled "Real-time Investigations on Photocatalytic Oxidation of Gaseous Methanol with Nanocrystalline WO₃-TiO₂ Composite Films in 7th International Symposium on Transparent Oxide thin Films for Electronics and Optics (TOEO-7), at International Conference Center, Waseda University, Tokyo, Japan during March 14-16, 2011.
8. Participated and presented a paper entitled "Gas-phase photocatalysis with WO₃ and composite WO₃-TiO₂ thin films in the 15th International Conference on Thin Films (ICTF-15), during November 8-11, 2011, at Kyoto, JAPAN [Won the Award for Encouragement of Research in Thin Films].

9. Participated and presented a poster entitled “Gas phase photocatalytic oxidation with nanostructured metal oxide thin films” at the International Conference on “New Age Science and Technology for Sustainable Development and 3Rd Annual Conference of Indian JSPS Alumni Association” " organized jointly by CSIR-National Environmental Engineering Research Institute and Indian JSPS Alumni Association, Toyo University, Japan during August 6-7, 2012 at Nagpur, India.
10. Participated in the International COMSOL Conference held on October 17-18, 2013, in Bangalore, India.
11. Participated and presented in the 8th National Conference on Industry Institute Intereaction-2016 at PCET in association with NASSCOM, BOAT, MIDC, and SME Chambers of India.
12. Participated and presented a paper entitled “WLAN (801.11) De-authentication attack detection using ANN.” at Emerging Trends in Computer Vision, Wireless Communication and Industrial Automation (ETCVWCIA-2016) organized by GOVERNMENT ENGINEERING COLLEGE, RAJKOT during 2nd- 3rd September 2016.
13. Participated and presented a paper entitled “Fabrication of SnS₂ thin films comprising nanosheets” at the National Conference on Chemistry of Chalcogens and its Nanotechnology (NC3-2017) organized by the Department of Applied Chemistry, Defence Institute of Advanced Technology (DU), DRDO, Ministry of Defence, Govt. of India, Girinagar, Pune.
14. Participated and presented a paper entitled “Phytochemical Analysis of Canna Indca Rhizomes” at the National Conference on Recent Trends in Physical, Chemical and Nanosciences organized by LBS College of Arts, Science & Commerce, Satara.
15. Participated and presented a paper entitled “Emerging Flexible and Ultrasensitive Toxic Gas Sensor Based on CNT Polymer Nanocomposite” at the National Conference on Recent Trends in Physical, Chemical, and Nanosciences organized by LBS College of Arts, Science & Commerce, Satara.
16. Participated and presented a paper entitled “A Review on the Synthesis of Ionic Liquid for CO₂ Capture” at the National Conference on Innovative Research in Chemical Sciences organized by the Department of Chemistry, Shivaji University, Kolhapur.
17. Participated and presented a paper entitled “A Review on the Implications of New Additions to the Periodic Table” at the National Conference on Innovative Research in Chemical Sciences organized by the Department of Chemistry, Shivaji University, Kolhapur.
18. Participated and presented a paper entitled “Removal of NO_x Using Selective Catalytic Reduction (SCR) For Different Industrial Applications” at the National Conference on Innovative Research in Chemical Sciences organized by the Department of Chemistry, Shivaji University, Kolhapur.
19. Participated and presented a paper entitled “Development of Nano particle-based biosensor for detection of spoilage in shell egg” at the National Conference on Innovative Research in Chemical Sciences organized by the Department of Chemistry, Shivaji University, Kolhapur.
20. Participated and presented a paper entitled “Introduction to MR fluids, its properties and applications” at the National Conference on Interdisciplinary Trends in Engineering and Technology organized by the Department of Technology, Shivaji University, Kolhapur.
21. Participated and presented a paper at the International Conference on “CRYSTAL BALL VISION ON SCIENCE & ENGINEERING FOR SOCIETAL UPLIFTMENT” organized by IJAA & NIO, CSIR, Goa,2018.

22. Participated and presented a paper entitled “MATHEMATICAL MODELING OF ELECTORRHEOLOGICAL DAMPER IN SEMIACTIVE SUSPENSION,” organized by IMRF, Chandigarh, India, 2018.
23. Participated in the International Conference on Advancement in Science & Technology (ICAST-2018), Visva Bharati, Santiniketan, India.
24. Participated in the International Conference on Emerging Advancement in Science & Technology (ICEAST-2019), DRDO, New Delhi.
25. Participated in the International Conference on Multifunctional Materials, Hyderabad, 2019
26. Participated in the International Conference on Frontier Areas of Science and Technology (ICFAST-2022) organized by the University of Hyderabad, Hyderabad.
27. Participated in the “Advances in Materials Science” Conference organized by the Department of Physics, Visva Bharti, India.
28. Participated in “Meet the Author and the Translator” and “Symposium on RINGAAN,” organized by the Department of English, Shivaji University Kolhapur.

b. Workshops Participated (National)

1. Participated in the National Workshop on Advanced Methods for Materials Characterization (NWMC) held at Multipurpose Hall, BARC TSH, Anushaktinagar, Mumbai, INDIA, from October 11-15, 2001.
2. Participated in National Symposium on Recent Advances in Renewable Energy Technologies (RARE-T-2002), held at Shivaji University, Kolhapur, Maharashtra, India, from August 13-15, 2002.
3. Attended two days of National Workshop on Industrial Electroplating held at Coimbatore, Tamilnadu, India, from 12-13 July 2003.
4. Participated in CAMPAIGN ON UNIVERSITY RESEARCH AND TRAINING (COURT) held at Shivaji University, Kolhapur, Maharashtra, India, on 26th and 27th June 2003.
5. Participated in National Seminar on Materials Processing and Characterization Techniques (NS-MPCT) held at the Department of Physics, Shivaji University, Kolhapur, Maharashtra, India, 28-29, March 2005.
6. Participated in a day workshop, “Review of Applied Physics Syllabus-2008”, on 2nd January 2009 at Sinhgad College of Engineering, Pune 4110 41.
7. Participated in the training course, “Introduction to COMSOL Multiphysics (ver 4.4), on 20th February 2014, conducted by COMSOL.
8. Participated in a day Seminar on HAZOP Management in Industry at the Department of Technology, Shivaji University, Kolhapur.
9. Participated in the GIAN Program on Cancer and Neurological Nanotechnology: From Basic to Translational and Clinical Sciences organized by Shivaji University, Kolhapur, sponsored by the Ministry of Human Resource Development, Gov. of India.
10. Participated in Workshop on Statistical Data Analysis using SPSS organized by the Department of Statistics, Shivaji University, Kolhapur.
11. Two-day workshop on “Research Writings, Ethics, Plagiarism, and Publishability,” held from 26th -27th July 2012 at Shivaji University, Kolhapur, India.
12. A Workshop on “Engineering Thermodynamics” under the National Mission on Education through ICT (MHRD, Gov. of India) at Shivaji University, Kolhapur, on 11/12/2012 and 11/12/2012.

13. Participated in a Technical workshop on the latest Test & Measurement Technology trends organized Jointly by Cryonics Instruments-eyesight Technologies & Department of Technology, Shivaji University, Kolhapur.
14. Participated in A day National workshop on Advances in Nano-Drug Delivery Systems organized by the Department of Physics, University of Mumbai.
15. Participated in A day National Workshop on Big Data Analytics with Hadoop organized by the Department of Computer Science, Shivaji University, Kolhapur.
16. Participated in the DAAD workshop on “Internationalisation at Indian Higher Education Institutions” organized by the University of Hyderabad.
17. Participated in the National Workshop on “Research, Innovation & Technology” organized by the Department of Higher and Professional Education, National Institute of Educational Planning and Administration Goa University, Goa.
18. Participated in TEQIP III workshop on “Radiation and Applications (A confluence of material Science and Accelerators)” organized at IIT Hyderabad.

c. Workshops Participated (International)

1. Attended Summer School of GOSPEL (General Olfaction and Sensing Projects on a European Level), 30th September to 5th October 2007. Europa Beach Hotel, Crete, Greece.
2. Kyoto Workshop on Recent Progress in Advanced Probe Microscopy and Spectroscopy, March 16, 2010, Katsura Campus, Kyoto University, Japan.
3. “CONFERENCE AND SCHOOL ON NUCLEATION AGGREGATION AND GROWTH”, at JNCASR, Bengaluru, India, 26th July to 6th August 2010.
4. A Workshop on “Brain Storming Session on Application of Sustainable Development in the State of Maharashtra”, 26th & 27th November 2012, jointly Organized by - Maharashtra Academy of Sciences (MASc), and Shivaji University, Kolhapur (SUK), Sponsored by and Rajiv Gandhi Science & Technology Commission (RGSTC).
5. A Workshop on “Empowerment of Students and Teachers through Synchronous and Asynchronous Instructions under the National Mission on Education through ICT (MHRD, Gov. of India) at Shivaji University, Kolhapur on 02/02/2013 and 09/02/2013.
6. A Workshop on “DATABASE MANAGEMENT SYSTEMS” under the National Mission on Education through ICT (MHRD, Gov. of India) at Shivaji University, Kolhapur, on 21/05/2013 and 31/05/2013.
7. The International workshop on “Nanotechnology and Advanced Functional Materials (NTAFM 2013)” was organized by the Materials Research Society of India, MRSI (Pune Chapter), on July 24th-25th, 2013.
8. Participated in Industry-Academia Interaction on “Industry Oriented Curriculum Development” in IISF-2016.
9. Participated in Industry-Academia Interaction on “Metrology for Time & Frequency, Electrical & Electronics Parameters” in IISF-2016.

10. List of paper/posters presented in Seminar/Conferences

Sr. No.	Name of Author/s	Year	Title of the Paper	Name of Symposia/Conference
1.	S.B. Sadale, M. Suchea, P. Horvath S. Christoulakis, R. Voicu, C. Tibeica, I.	2007	ZnO thin films for cantilever coatings: structural and mechanical properties,	E-MRS-spring meeting, Strasbourg, France

	Bineva, R. Muller, T. Kitsopoulos and G. Kiriakidis		observations of photoplastic effect	
2.	S.B.Sadale, G. Kiriakidis	2008	Ultra-sensitive ozone sensors based on nanostructures of ZnO	International conference on nanomaterials and applications (ICNAMA-2008), Shivaji University, Kolhapur.
3.	Shivaji B. Sadale, Kei Noda, Kei Kobayashi, and Kazumi Matsushige	2010	Hydrogen production using nanocrystalline WO ₃ films loaded with platinum with gas-phase photocatalysis	57 th Spring Meeting of The Japan Society of Applied Physics (JSAP), March 17- 20, 2010, at Tokai University, Kanagawa, Japan.
4.	Shivaji B. Sadale, Kei Noda, Kei Kobayashi, and Kazumi Matsushige	2010	Hydrogen Production from Gas Phase Photocatalytic Decomposition of Methanol using Pt. supported Nanocrystalline WO ₃ Films	The 37 th International Symposium on Compound Semiconductors” (ISCS, 2010) at Takamatsu Symbol Tower, Kagawa, Japan.
5.	Shivaji B. Sadale, Kei Noda, Kei Kobayashi, and Kazumi Matsushige	2010	Photocatalytic Decomposition of Gaseous Methanol with Nanocrystalline Tungsten Trioxide Films in High Vacuum	3rd International Symposium on Transparent Conductive Materials (TCM-2010) at Crete, Greece, during 17-21 October 2010
6.	Shivaji B. Sadale, Kei Noda, Kei Kobayashi, and Kazumi Matsushige	2010	Hydrogen Production Using Gas Phase Photocatalysis with Nanocrystalline TiO ₂ -WO ₃ Composite Films	The 15 th International Conference on TiO ₂ Photocatalysis: Fundamentals and Applications (TiO ₂ -15), San Diego, California, USA.
7.	S. B. Sadale, K. Noda, K. Kobayashi, H. Yamada & K. Matsushige	2011	Real-time Investigations on Photocatalytic Oxidation of Gaseous Methanol with Nanocrystalline WO ₃ -TiO ₂ Composite Films	7 th International Symposium on Transparent Oxide Thin Films for Electronics and Optics, at International Conference Center, Waseda University, Tokyo, Japan
8.	S. B. Sadale, K. Noda, K. Kobayashi, H. Yamada & K. Matsushige	2011	Gas phase photocatalysis with WO ₃ and composite WO ₃ -TiO ₂ thin films	The 15 th International Conference on Thin Films (ICTF-15), at Kyoto, JAPAN
9.	S. B. Sadale	2012	Gas phase photocatalytic oxidation with nanostructured metal oxide thin films	International Conference on “New Age Science and Technology for Sustainable Development “and 3 Rd Annual Conference of Indian JSPS Alumni Association”, at Nagpur, India.
10.	S. B. Sadale	2014	Effect of ZnS surface treatment on solar cell performance of ZnO/CdS core-shell nanorod array photoelectrode	2 nd International Conference on “Physics of Materials and Materials Based Device Fabrication (ICPM-MDF-2014)”, Shivaji University, Kolhapur
11.	S.B. Sadale, P.G. Patil, S.J. Pawar, M.N. Nikam	2015	Solar thermal refrigeration system using non-imaging concentrator	International Photovoltaic Solar Energy Conference (Solar Asia-2015)
12.	S.B. Sadale, P.G. Patil, S.J. Pawar, M.N. Nikam	2015	Solar thermal water heating system using a non-imaging concentrator	International Conference on “Contemporary Advances of Science and Technology”
13.	S.B. Sadale, Nitish M. Kalan	2015	Web hosting on LAN using PHP for collection of student’s data	International Conference on Mathematics-2015
14.	S.B. Sadale, D.M. Waghmare	2016	Investigations on Properties of Pervious Concrete Materials	International Conference on “Science & Technology: Future Challenges & Solutions”

15.	Shivaji B. Sadale, Divakar M. Waghmare	2016	Waste water treating drainage system	Young Scientists Conclave in India International Science Festival-2016
16.	Shivaji B. Sadale, Priyanka R. Patil	2016	Electrochemical synthesis of iron oxide nanoparticles	Young Scientists Conclave in India International Science Festival-2016
17.	Shivaji B. Sadale, Madhuri M. Kininge	2016	Removal of NO _x using selective catalytic reduction for different industrial applications	Young Scientists Conclave in India International Science Festival-2016
18.	Shivaji B. Sadale, Nitish M. Kalan	2016	WLAN (802.11) DOS attack	Young Scientists Conclave in India International Science Festival-2016
19.	S.B. Sadale	2016	WS ₂ Nanosheets as anode for batteries	International Conference on Advanced Rechargeable Batteries & Allied Materials (ICARBM-2017)
20.	S.B. Sadale, Nitish M. Kalan	2017	A Machine Learning Approach for Detection of SQL Injection Attack	International Conference on Crystal Ball Vision on Science and Engineering for Societal Upliftment
21.	S.B. Sadale, Madhuri M. Kininge	2017	Reduction of NO _x using Photocatalytic Reactor	International Conference on Crystal Ball Vision on Science and Engineering for Societal Upliftment
22.	S.B. Sadale, Divakar M. Waghmare	2017	Canna Indica: A Plant for Future	International Conference on Crystal Ball Vision on Science and Engineering for Societal Upliftment
23.	S.B. Sadale, Saie Mahajan, Vaishnavi Vinay Mungarwadi	2017	Use of Ag ₃ PO ₄ for photodecomposition of volatile organic compounds	International Conference on Crystal Ball Vision on Science and Engineering for Societal Upliftment
24.	S.B. Sadale, Yashodhan Dixit	2017	Extraction of corn fiber from corn stalk	International Conference on Crystal Ball Vision on Science and Engineering for Societal Upliftment
25.	S. B. Sadale and H. P. Salunkhe	2018	Mathematical Modelling of Electrorheological Damper in Semiactive Suspension	International Conference on Advances in Mathematics, Computers & Physical Sciences
26.	Sushant B. Patil and Shivaji B. Sadale		Electrochromic energy storage performance of Tungsten Oxide (WO ₃) thin films prepared by hydrothermal method	International Conference on Emerging Advancement in Science & Technology at Solid-state Physics Laboratory, DRDO, New Delhi (5-6 th September 2019)
27.	Miss. Swapnali P. Rajmane and Shivaji B. Sadale	2019	Thermoacoustic investigations on nanofluids	International Conference on Multifunctional Materials, Hyderabad
28.	Miss. Pratiksha D. Donolikar and Shivaji B. Sadale	2019	Facile synthesis of MnWO ₄ nanostructure for supercapacitor application.	International Conference on Multifunctional Materials, Hyderabad
29.	Sushant B. Patil and Shivaji B. Sadale	2020	Electrodeposited WO ₃ thin films for Electrochromic energy storage application	National Symposium on Recent Trends in Condensed Matter Physics and Materials Science, Goa University, Goa.
30.	Shivaji B. Sadale, Hikaru Masegi, Sakiko Imai and Kei Noda	2020	Electrochemical fabrication of a-Fe ₂ O ₃ nanotube array/Cu ₂ O composites toward visible-light-responsive photocatalysis	National Symposium on Recent Trends in Condensed Matter Physics and Materials Science, Goa University, Goa

31.	Sushant B. Patil, Shivaji B. Sadale	2020	Electrodeposited WO ₃ thin films for Electrochromic Energy Storage Applications	One day International Conference on “Clean Energy Conversion and Storage Technologies” SPK College, Sawantwadi, April 2020
32.	Shivaji B. Sadale	2021	Gas Phase Photocatalysis: Towards realization of photocatalytic applications.”	Sixth International Conference on Advances in Materials Science (Online)(ICAMS-2021).
33.	Sushant B. Patil, Shivaji B. Sadale	2021	Performance of Electrochromic WO ₃ Thin Films for Energy Storage	Sixth International Conference on Advances in Materials Science (Online)(ICAMS-2021).
34.	Shruti D. Khanna, Shivaji B. Sadale	2021	Thermoelectric Investigations on WS ₂ Thin Films Prepared by Vander Walls Rheotaxy Process	Sixth International Conference on Advances in Materials Science (Online)(ICAMS-2021).
35.	Miss. Swapnali P. Rajmane and Shivaji B. Sadale	2021	Thermo-Physical Properties of Carbon Based Nanofluids (CBNFs)	Sixth International Conference on Advances in Materials Science (Online)(ICAMS-2021).
36.	Pratiksha D. Donolikar and Shivaji B. Sadale	2021	Synthesis and Characterization of Graphitic Carbon Nitride for Degradation of Dye	Sixth International Conference on Advances in Materials Science (Online)(ICAMS-2021).
37.	Sushant B. Patil, Shivaji B. Sadale	2022	Electrodeposition of nanostructured NiO for bifunctional electrochromic supercapacitor	National Conference on Advances in Functional & Sustainable Materials {AFSM-2022} at Sant Gadage Maharaj College, Karad (08 th April 2022)
38.	Sushant B. Patil, Shivaji B. Sadale	2022	Electrodeposited NiO nanoflakes for electrochromic energy storage applications	International Conference on Frontier Areas of Science & Technology (ICFAST 2022) at the University of Hyderabad (09-10 th September 2022)
39.	Amol B. Chavan, Sanjaykumar S. Gawade, Shivaji B. Sadale	2023	A Review on HA-Coated Mg-Based Biodegradable Medical Implants	International Conference on Frontier Areas of Science and Technology (ICFAST-2023), Shivaji University, Kolhapur, 08-09 th September 2023
40.	Hayato Goto, Hikaru Masegi, Shivaji B. Sadale , Kei Noda	2023	Pulse Electrode Position of Cu ₂ O on TiO ₂ Nanotube arrays and its Application to Gas Phase CO ₂ photoreduction	International Conference on Frontier Areas of Science and Technology (ICFAST-2023), Shivaji University, Kolhapur, 08-09 th September 2023
41.	Swapnali P. Rajmane, Omkar Nille, G. B. Kolekar, Shivaji B. Sadale	2023	Studies on Glucose Detection Using Graphene Quantum Dots (GQDs) by Hydrothermal Method	International Conference on Frontier Areas of Science and Technology (ICFAST-2023), Shivaji University, Kolhapur, 08-09 th September 2023
42.	Shruti D. Khanna, Shivaji B. Sadale	2023	Nanostructures MoS ₂ for Thermoelectric Applications	International Conference on Frontier Areas of Science and Technology (ICFAST-2023), Shivaji University, Kolhapur, 08-09 th September 2023
43.	D. G. Potdar, S. B. Sadale , P. P. Chikode	2023	Electrodeposition of Ni thin Films and Their Nucleation and Growth Kinetics Studies	International Conference on Frontier Areas of Science and Technology (ICFAST-2023), Shivaji University, Kolhapur, 08-09 th September 2023
44.	Pratiksha D. Donolikar, Shivaji B. Sadale	2023	Effect of Synthesis Temperature of Graphitic Carbon Nitride on Photocatalytic Degradation of Organic Dye	International Conference on Frontier Areas of Science and Technology (ICFAST-2023), Shivaji University, Kolhapur, 08-09 th September 2023

45.	Sushant B. Patil, Lahu H. Kathwade, Vishwanath D. Mote, Shivaji B. Sadale	2023	Effect of annealing temperature on supercapacitive performance of SILAR-grown Mn ₃ O ₄ nanoflakes	International Conference on Frontier Areas of Science and Technology (ICFAST-2023), Shivaji University, Kolhapur, 08-09 th September 2023
46.	Sushant B. Patil, Shivaji B. Sadale		Electrodeposition of NiO Nanoflakes for Electrochromic Energy Storage: Effect of Deposition Time	National Conference on Physics of Materials & Materials-based Device Fabrication 2023 at the Department of Physics, Shivaji University, Kolhapur (25-26 th November 2023)
47.	Swapnali P. Rajmane, Shivaji B. Sadale	2023	Evaluation of Thermoacoustic Properties of Nanofluids by Ultrasonic Interferometer	2 nd National Conference on Science and Technology for Sustainable Development, Jaysingpur College, Jaysingpur
48.	Dipali G. Potdar, Prashant Chikode, Shivaji Sadale	2023	Magnetoresistive Properties of Ni-Based Alloy Films	2 nd National Conference on Science and Technology for Sustainable Development, Jaysingpur College, Jaysingpur
49.	Sushant B. Patil, Shivaji B. Sadale	2023	Hydrothermally Grown WO ₃ Nanoplates for Supercapacitor Applications	2 nd National Conference on Science and Technology for Sustainable Development, Jaysingpur College, Jaysingpur
50.	Swapnali P. Rajmane, Bandopant D. Vhanmore, Shivaji B. Sadale	2024	A Review on Carbonaceous Nanofluids for Heat Transfer Systems	International Photovoltaic Solar Energy Conference (IPSEC)-2024, Goa
51.	Dipali G. Potdar, Yugen Kulkarni, Niketa Pawar, Swapnil Banne, Prashant Chikode, Shivaji Sadale	2024	Studies on Nucleation and Growth Kinetics of Electrodeposited Ni Thin Films	International Photovoltaic Solar Energy Conference (IPSEC)-2024, Goa
52.	Pratiksha D. Donolikar, Shivaji Sadale	2024	Progress in Exploring Photocatalytic Application of Graphitic Carbon Nitride	International Photovoltaic Solar Energy Conference (IPSEC)-2024, Goa
53.	Sushant B. Patil, Shivaji B. Sadale	2024	Pulse-Electrodeposited Nickel Oxide Thin Films for Bifunctional Electrochromic Supercapacitors	International Photovoltaic Solar Energy Conference (IPSEC)-2024, Goa

11. Details of Funding received:

Sr. No.	Title of Project	Name of PI	Funding Agency	Cost Rs.	Duration (Year)	Status
1	Ultra-fast solar hydrogen production using gas phase photocatalysis based on core-shell semiconductor nanostructures	Dr. S. B. Sadale	DST & JSPS	5,46,000	July 2013-July 2015 2 Years	Completed
2	Studies on efficient tandem polymer solar cells based on graphene-grafted	Dr. S. B. Sadale (Co-PI)	BRNS	24,89,500	3 Years	Completed

	polymers and nanostructured inorganic materials					
3	Fabrication of thin film solar cell based on nano-structured $Cu_2ZnSn(SxSe_{1-x})_4$	Dr. S. B. Sadale (Co-PI)	DST-Egypt	7,55,500	2 Years	Completed
4	Synthesis of one-dimensional core-shell nanostructure for efficient quantum dot-sensitized solar cell.	Dr. S. B. Sadale (Co-PI)	UGC	16,95,000	3 Years	Completed
5.	Nanostructures of MX_2 (M=W, X=S) for Thermoelectric Applications	Dr. S. B. Sadale	SUK	250000	2 Years	Completed
6.	13 th India-Japan Science and Technology Conclave: International Conference on Frontier Areas of Science & Technology (ICFAST-2023)	Dr. S. B. Sadale	SERB	300000	September 2023	Completed
7.	13 th India-Japan Science and Technology Conclave: International Conference on Frontier Areas of Science & Technology (ICFAST-2023)	Dr. S. B. Sadale	CSIR	100000	September 2023	Completed
8.	13 th India-Japan Science and Technology Conclave: International Conference on Frontier Areas of Science & Technology (ICFAST-2023)	Dr. S. B. Sadale	DRDO	50000	September 2023	Completed

9.	13 th India-Japan Science and Technology Conclave: International Conference on Frontier Areas of Science & Technology (ICFAST-2023)	Dr. S. B. Sadale	JSPS-IJAA	500000	September 2023	Completed
10.	Nanostructures of MoS ₂ for Thermoelectric Applications	Dr. S. B. Sadale	SUK	270000	2 Years	Ongoing

12. Fellowships/Awards:

- ❖ **CSIR-New Delhi-Senior Research Fellow -NATIONAL LEVEL FELLOWSHIP**
- ❖ **POSTDOCTORAL FELLOW - C.N.R.S., France**
- ❖ **Marie Curie Fellow –European Commission (EU)**
- ❖ **JSPS Fellow-Japan**
- ❖ **JSPS Bridge Fellow- Japan**
- ❖ **Visiting Assistant Professor- Keio University, Japan**
- ❖ **Won Second Prize for Poster presentation at 2nd International Conference on Electroanalytical Chemistry and Allied Topics (ELAC)-2004, Paper entitled “Electroanalysis of Spray Deposited Pristine Iridium Oxide and Molybdenum Doped Iridium Oxide Thin Film Coatings and their Electrochromism” at Dona Paula, GOA-India, organized by Indian Society for Electro Analytical Chemistry during January 18 to 23, 2004.**
- ❖ **Award for Encouragement of Research in Thin Films, in the 15th International Conference on Thin Films (ICTF-15), November 11, 2011, held in Kyoto, Japan.**
- ❖ **Second prize for poster presentation at the India International Science Festival (IISF-2016).**
- ❖ **First Prize for poster presentation in an international conference on Crystal Ball Vision on Science and Engineering for societal upliftment (IJAA-JSPS-2017)**

13. Invited as resource persons in Workshops / Seminars / Conferences organized by external professional agencies

i. Invited Talks

1. Lecture on “Nanotechnology” at INSPIRE SCIENCE CAMP of DST organized by Jaysingpur College, Jaysingpur, Tal.: Shirol, Dist.: Kolhapur.
2. Lecture on “EM Spectrum and Life” at School of Nanoscience and Technology, Shivaji University, Kolhapur.
3. Invited talk on Energy conservation at District Level Children's Science Congress, arranged by National Children’s Science Congress at V.S. Khandekar Prashala, Kolhapur.

4. Invited talk on “Nanotechnology for Energy Demands” at SGGSIET, Nanded, Maharashtra, India.
5. Invited talk on “Role of Incubation Centre & IPR Cell for Science College” at Sharad Institute of Technology, College of Engineering, Yadrav-Ichalkaranji.
6. Invited talk on “Importance of Physics and career opportunities in Physics” at Miraj Mahavidyalaya, Miraj.
7. Invited talk on “Communication skills, Personality development, and interview skills” at KDCA’s Institute of Pharmacy, Kolhapur.
8. Invited talk on “Careers in Research” at Post Graduate Dept. of Physics, Gov. College, Mandya, Karnataka.
9. Invited talk on Talk on Research Methodology at Emerging Trends in Computer Vision, Wireless Communication and Industrial Automation (ETCVWCIA) organized by Govt. Engineering College, Rajkot-2nd - 3rd September 2016.
10. Invited talk on IPR and filing Patents at LBS college, Satara, 12, Oct. 2017.
11. Invited talk on Innovative Teaching Methodology at PVPIT, Budhgaon, Sangli, 28 May-01 June 2018.
12. Invited talk on IPR at Rajarshi Shahu College of Arts & Commerce, Rukadi, Kolhapur, 16 Feb. 2018.
13. Invited Talk on IPR at Miraj Mahavidyalaya, Miraj, 21 Dec. 2018.
14. Invited Speaker at 3rd International Conference on Nanomaterials for Energy Conversion and Storage Application (NECSA-2024) organized by the Solar Research and Development Centre, Pandit Deendayal Energy University, Gandhinagar.
15. Resource Person-Session on Effective Ethical Negotiations in Induction Program for Teachers of Jawahar Navodaya Vidyalaya, Kagal, organized by Jawahar Navodaya Vidyalaya, Kagal.
16. Chair Person-International e-conference on Cutting Edge Smart Materials and Nanotechnology (ICCESMN-2020) Organised by the Department of Physics and IQAC of Sadguru Gadage Maharaj College, Karad.
17. Invited talk on “Gas Phase Photocatalysis: Towards realization of photocatalytic applications” in the sixth international conference on Advances in Materials Science (Online)(ICAMS-2021).
18. Resource Person- Lecture on “Meaning of Research” in the Department of Physics, Shivaji University, Kolhapur.
19. Resource Person—A one-day workshop on the topic “Research Methodology and Thesis Writing” organized by DKTE-led college.
20. Coordinated the intellectual property awareness program under the National Intellectual Property Awareness Mission organized by the Intellectual Property Office in India.
21. Resource Person- Session on Innovation and Intellectual Property Rights Awareness organized by Bharati Vidyapeeth College of Engineering, Kolhapur.
22. Resource Person- Deliver a Guest Lecture on “Intellectual Property Rights” organized by D. Y. Patil College of Nursing Kolhapur.
23. Resource Person- 3-Days International Interdisciplinary Conference organized by Nagpur University, Nagpur.
24. Resource Person—International Conference on Advances in Renewable Energy-2023 (ICARE-2023), organized by the School of Physical Sciences, Swami Ramanand Teerth Marathwada University, Nanded.
25. Resource Person- Seminar on Awareness of IPR and Filing of Patents organized by Ashokrao Mane Group of Institutions, Vathar Tarf Vathar.

26. Resource Person- Delivered a talk on “Quantum Physics: A New Path to Spirituality” organized by the Department of English, Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur.
27. Resource Person- One One-day workshop on “Report writing and IPR” organized by the Department of Botany, Yashwantrao Chavan College of Science Karad.
28. Resource Person- Talk on “Intellectual Property Rights” organized by Ganpatrao Aarwade College of Commerce Sangli.
29. Resource Person- Delivered Talk on “IPR” organized by Yashwantrao Chavan Mahavidyalaya Halkarni.
30. Resource Person-Talk on “Intellectual Property Rights” organized by Shripatrao Chougule Arts and Science College, Malwadi Kotoli.
31. Resource Person-Talk on “Intellectual Property Rights” organized by the Department of Electronics, Shivaji University, Kolhapur.
32. Resource Person- One-day Workshop on “Intellectual Property Rights” organized by Mahila Mahavidyalaya Karad.
33. Resource Person- Workshop on “Intellectual Property Rights” organized by the Department of Law, Deshbhakt Ratnappa Kumbhar College of Commerce Kolhapur.
34. Resource Person- one-day workshop on “Intellectual Property Rights: Innovations and Patent Filing” Organized by IQAC, College of Non-Conventional Vocational Courses for Women, Kolhapur.
35. Resource Person- Lecture on “Research Writing” at the workshop organized by the DKTE, Ichalkaranji.
36. Resource Person- Workshop on “Intellectual Property Rights (Patents, Designs, trademarks, copyrights, etc.)” organized by Rajarshi Shahu Arts and Commerce College, Rukadi.
37. Invited talk on Research Methodology at Seminar of Research Careers organized by D.Y. Patil Technical Campus, Talsande, Kolhapur.
38. Invited talk on Maintenance and Safety measures in Physics Laboratories in Workshop at Jawahar Navodaya Vidyalaya.
39. Invited talk on Funding agencies and Developing Research Proposals at Sharad Institute of Technology, College of Engineering, Yadrav-Ichalkaranji
40. Resource Person- Delivered a Guest Lecture on “Intellectual Property Rights” organized by Shahaji Law College, Kolhapur.
41. Resource Person—A one-day workshop on Preparing for the Avishkar Research Competition, jointly organized by Shivaji University, Kolhapur, and Savitribai Phule Mahila Mahavidyalaya Satara.
42. Resource Person—D. P. Bhosale College Koregaon organized a one-day workshop on “Research Ethics and Intellectual Property Rights.”
43. Resource Person-Patentability criteria for invention in UGC-CPE sponsored One Day National Workshop on Intellectual Property Rights and Patent organized by Chhatrapati Shahu Institute of Business Education and Research (CSIBER), Kolhapur.
44. Resource person for District Level Children’s Science Congress, arranged by National Children’s Science Congress at V.S. Khandekar Prashala, Kolhapur.
45. Resource person for State Level Children’s Science Congress 2012, arranged by National Children’s Science Congress at Pune and Dhule, Maharashtra.
46. Resource person for 15th ISTE Student National Convention, organized by Sanjay Ghodawat Group of Institutions, Atigre, Dist.: Kolhapur.

47. Resource person for National Conference on Emerging Technology, Engineering, and Architecture Trends, organized by D. Y. Patil College of Engg. & Tech., Kasaba Bawada, Kolhapur.
48. Resource Person-IPR tools and their importance in Familiarization Workshop on Patents and IPR organized by Rajaram College, Kolhapur.

ii. Worked as Judge/Session Chair

1. Session Chairman-Industrial Automation at Emerging Trends in Computer Vision, Wireless Communication and Industrial Automation (ETCVWCIA) organized by Govt. Engineering College, Rajkot -2nd-3rd September, 2016.
2. Resource Person-National Level Science Exhibition Competition of students Jawahar Navodaya Vidyalaya organized by Jawahar Navodaya Vidyalaya, Kagal.
3. Resource Person-Judge-for Avishkar-2017, at LBS College of Arts, Science & Commerce, Satara.
4. Resource Person-Judge-for Avishkar-2017 at Shivaji University, Kolhapur.
5. Resource Person-Screening and Evaluation of research proposals for MEXT scholarships Embassy of Japan by Embassy of Japan.
6. Resource Person-Judge for Extempore Speech Competition-2017 during NSD celebration organized by Dept. of Technology, Shivaji University, Kolhapur.
7. Chair Person-Nobel Laureate Seminar Series 11th India-Japan Science and Technology Seminar commemorating the 70th Anniversary of India-Japan Diplomatic Relations and 75th Anniversary of Indian Independence.
8. Chairperson —Two-Day International Conference on Innovation in Smart and Technological Materials organized by the Department of Physics, Sadguru Gadage Maharaj College Karad.
9. Chair Person- One day workshop on “Intellectual Property Rights” organized by the Department of Chemistry, Institutions, Innovation Council, Sadguru Gadage Maharaj College, Karad.

iii. Membership of academic bodies

- Associated Member of the Institute of Physics, London.
- Member of THE JAPAN SOCIETY OF APPLIED PHYSICS, Member number
- Life Member of the Indian JSPS Alumni Association.
- Life Member of the Indian Association of Physics Teachers (IAPT) (9959).
- Life Member of Materials Research Society of India (MRSI) (LMB 2273)

14. Participation in staff development programs

Name of the Course/ Summer School	Place	Duration	Date	Sponsoring Agency

Short-term course on “Continuous Assessment and Examination Evaluation”	UGC-HRDC Jaipur	One Week	21/10/2013 to 26/10/2013	UGC, New Delhi
Orientation Course	UGC-HRDC, Nainital	28 days	02/03/2015 to 28/03/2015	UGC, New Delhi
Refresher Course	UGC-HRDC, Kerala	21 days	25/11/2015 to 15/12/2015	UGC, New Delhi
Management Capacity Enhancement Program	IIM-Udaipur	6 days	04/04/2016 to 09/04/2016	TEQIP-II Project
Short-Term Training Programme on Innovative Teaching Methodology	PVPIT Budhgaon, Sangli	5 Days	28/05/2018 to 01/06/2018	PVPIT Budhgaon, Sangli
Modern Cryptography	IIT Kharagpur	6 days	17-21 Sept, 2018	TEQIP-III
Research, Innovation, and Technology in Higher Education	Goa University	5 Days	28 Jan 2019 to 01 Feb 2019	NIEPA, HRD-UGC
Radiation and applications (A confluence of Material Science and Accelerators)	IIT Hyderabad	6 days	17-22 Feb, 2019	TEQIP-III
NBA and NAAC accreditation	Engineering Staff College, Hyderabad	6 days	18-22 June, 2019	TEQIP-III
Short-term course on Introduction to Glass Science and Technology	TEQIP-KIT	5 days	14/12/2020 to 18/12/2020	TEQIP
Faculty Development Program on ICT-based New Paradigms of E-Teaching and E-Learning: Digital Pedagogy	University of Delhi	2 weeks	15/09/2020 to 30/09/2020	University of Delhi
Training and Placement Officers Development Program	Hotel Orritel, Talegaon Pune	2 days	22-23 July, 2022	MaTPO
One-week International Research Development & Innovation Programme on “IPR, Grants & Publications”	Indian Society for Technical Education	5 Days	24/06/2024 to 28/06/2024	D. Y. Patil Agriculture & Technical University, Talsande
UGC Sponsored Short Term Programme-Research Methodology (Online)	UGC-Malaviya Mission Teacher Training Centre Goa University	7 Days	23/07/2024 to 29/07/2024	UGC

15. Programs Organized

Sr. No.	Name of Programme	Funding Agency	Cost Rs.	Year	No. of Participants	Status
1.	One Day Awareness Camp on Beekeeping	CBRTI, KVIC, Gov. of India	5000/-	2012	100	Completed

2.	One day Workshop on organic electronic devices	TEQIP-II, Shivaji University	2,10000/	2013	350	Completed
3.	Alumni Meet of DoT students	Shivaji University	Nil	2013	160	Completed
4.	Alumni Meet of DoT students	Shivaji University	20,000	2014	150	Completed
5.	Science Camp (INSPIRE Science Camp)	DST, Gov. of India	13,00,000 /-	2014	200	Completed
6.	Export of Agri Produce: Procedure and Opportunity	Shivaji University, Kolhapur	20000	2019	50	Completed
7.	Meet the Scientist “Strengthening Interdisciplinary Research Aptitudes in Universities: Global Opportunities”	Shivaji University, Kolhapur	15000	2023		Completed
8.	Workshop on Patent Drafting	Shivaji University, Kolhapur	20000	2023	30	Completed
9.	International Conference on Frontier Areas of Science and Technology (ICFAST-2023)	JSPS, SERB, DRDO,	5,00,000/-, 300000/-, 50000/-	2023	434	Completed
10.	Workshop on Patent Drafting	Shivaji University, Kolhapur	25000	2023	35	Completed
11.	International Workshop on Bilateral Collaborations and Exchanges with National Dong Hwa University, Taiwan	PM-USHA Scheme	3,50,000/-	2024	150	Completed
12.	International Seminar on Bilateral Collaborations and Research Opportunities with Mid Sweden University, Sweden	PM-USHA Scheme	50,000/-	2024	90	Completed
13.	One-day Workshop on Alexander von Humboldt Research Fellowships for Postdoctoral Researchers	PM-USHA Scheme	20,000/-	2025	70	Completed

16. Collaboration

➤ National Collaboration:

- Bhabha Atomic Research Centre, BARC, Mumbai
- National Chemical Laboratory, N.C.L., Pune
- Centre for Materials for Electronic Technology, Pune
- Central Electrochemical Research Institute, C.E.C.R.I., Karaikudi, T.N.
- Solapur University, Solapur, M.S.
- Savitribai Phule Pune University, Pune
- National Environmental Engineering Research Institute (NEERI), Nagpur.
- Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore
- UGC-DAE Consortium for Scientific Research, Indore, M.P.

➤ International Collaboration:

- Groupe d'Etude de la Matière Condensée (GEMaC) University of Versailles Saint-Quentin-en-Yvelines and Centre National de la Recherche Scientifique (CNRS), Versailles, France
- Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology, Hellas, Heraklion, Crete
- Kyoto University, Kyoto, Japan.
- Keio University, Yokohama, Japan
- National Research Center, Cairo, Egypt
- Mid Sweden University, Sweden
- National Dong Hwa University (NDHU), Taiwan

Countries Visited: USA, Japan, France, Switzerland, Germany, Romania, Bulgaria, Greece, Egypt, Poland, Thailand, Malaysia, Egypt, etc.