

Information for preparing the Self Study Report
For NAAC - 3rd Cycle
CRITERION III: RESEARCH, CONSULTANCY AND EXTENSION

Dr. Sunil Rameshgir Gosavi

**Material Research Laboratory, Department of Physics,
A.S. Mandal's, Arts and Commerce College Trusts, C.H.C. Arts, S.G.P. Commerce and
B.B.J.P. Science College, Taloda, Dist. Nandurbar, (M.S.) India**

❖ Educational Qualifications:			
	1985	S.S.C. (S.S.C. Board Pune), Janata Vidyalaya, Wadali Bhoi, Tal. Chandwad, Dist. Nashik.	First Class
	1987	H.S.C. (H.S.C. Board Pune), K. K. W. Arts, Commerce and Science Jr. College, Pimpalgaon (B.) Dist. Nashik.	II Grade
	1990	B.Sc. (University of Poona, Pune), K. K. W. Arts, Commerce and Science College, Pimpalgaon (B.) Dist. Nashik.	First Class
	1992	M.Sc. (University of Poona, Pune), S.S.V.P.S. Dr. P. R. Ghogrey Science College, Dhule. (First Rank in the University)	First Class with Distinction
	2010	Ph.D. (Physics) Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.	
❖ Ph.D. Thesis Title:			
	Completed Ph. D. in August 2010 under the guidance of Dr. Ramphal Sharma, Department of Physics, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad on the topic entitled “Growth, structural, optical and electrical properties of Cu _{2-x} Se semiconductor thin films for photovoltaic applications.”		

❖ Contact Information:		
	Office:	Corresponding Address:
	Department of Physics, A.S. Mandal's, Arts and Commerce College Trusts, C.H.C. Arts, S.G.P. Commerce and B.B.J.P. Science College, Taloda, Dist. Nandurbar, (M.S.) India , Pin. 425413.	“Chandraratna”, Plot No. 31, Haraklalnagar, Taloda, Dist. Nandurbar, (M.S.) India Pin. 425413.

❖ Appointment Details:		
	1.	Name of the Employee: Dr. Sunil Rameshgir Gosavi
	2.	Department: Department of Physics

	3.	Date of Birth: 06/10/1969
	4.	Religion and Caste: Hindu Bawa (N.T. B)
	5.	Date of Appointment: 24/08/1993
	6.	Date of Confirmation: 24/08/1995
	7.	University Approval No.: NMU/93/5/97/10456 Dated 05/10/1993.
	8.	University Approval No.: NMU/18/No.14/1182/2011 Dated 25/07/2011.
	9.	PG recognition letter (By Paper): NMU/11/PGR/Physics/284/2009 Dated 19/11/2009.
	10.	PG recognition letter (By Research): NMU/11/PGR/Phy/2425/2012 Dated 21/09/2012.

❖ Awards and Achievements:		
	1992	For securing highest number of marks at the M.Sc. Physics examination, in Poona University, Pune held in May-1992.
	1.	The late Shri. Madhav Laxman Nandgaonkar prize.
	2.	Late Shri. D.R. Pradhan (I.C.S.) prize.
	3.	Late Dr. Moreshwar Vasudeo Chiplunkar Memorial prize.
	4.	The late Dr. Vishwanath Krishnaji Garde prize.

❖ Total students registered for their Doctoral Research (Ph.D.)			
	Sr. No.	Name of the students	Title
	1.	Mr. Kailas Bansilal Chaudhari Regn. No./Ref: NMU/11/Ph.D./Phy./25/2013	Studies on synthesis, structural, optical and electrical properties of chemically deposited CdX (X = S, Se), thin films, TiO ₂ /CdS & TiO ₂ /CdSe bilayer thin films.
	2.	Mr. Chandrashekhar Panditrao Nikam NMU/11/Ph.D./Phy./34/2014	Cadmium Chalcogenides and its alloy thin films: Chemical Synthesis, Characterization and its Application in Optoelectronics.
	3.	Mr. Bhausahab Narayan Kakade NMU/11/Ph.D./Phy./29/2014	Synthesis of In ₂ S ₃ -Ag ₂ S layers and AgInS ₂ thin films by SILAR technique: Study of structural, optical and electrical properties for its optoelectronic applications
	4.	Mr. Yogesh Narayan Rane NMU/11/Ph.D./Che./1/2013 (Co-guide)	Synthesis, characterization and study of photocatalytic properties of semiconductor metal oxides thin films towards degradation of dyes

	5.	Mr. Dipak Ambalal Shende NMU/11/Ph.D./Che./2/2013 (Co-guide)	Chemical deposition of zinc cadmium sulphide ($Zn_xCd_{1-x}S$) thin films and study on their photocatalytic activity.
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❖ Area of Research:			
	1.	Metal Chalcogenide semiconductors,	
	2.	Chemical bath deposition, SILAR, Electrodeposition and spray pyrolysis technique,	
	3.	Solar cells,	
	4.	Photo sensors and	
	5.	Photo catalysts.	

❖ Project Completed (MRP completed):			
	1.	Principal investigator of a U.G.C. funded Minor Research Project entitled “Growth, structural, optical and electrical properties of CuSe semiconductor thin films for photovoltaic application”. Amount sanctioned: Rs. 70000.00 (2008-2010)	

❖ Academic Training Programmes attended:			
	1.	Online Course of Learning Physics through Simple Experiments organized by Centre for Development of Technical Education, Indian Institute of Technology (IIT) Kanpur.	20 th September 2016 to 20 th November 2016
	2.	First refresher course in Physical Sciences (Interdisciplinary) refresher program conducted by Banaras Hindu University, Varanasi, organized by Department of Physics, Banaras Hindu University, Varanasi.	31 st January 2012 to 20 th February 2012
	3.	Orientation program conducted by University of Poona, Pune related to the Value Education.	28 th November to 25 th December 2003
	4.	Refresher program conducted by University of Poona, Pune related to the Environmental Science organized by Department of Environmental Science, Shivaji University Kolhapur.	25 th November to 15 th December 2002
	5.	Refresher program conducted by North Maharashtra University, Jalgaon, related to the Physics organized by Department of Physics, Pratap College Amalner.	18 th December 1995 to 14 th January 1996

❖ Publications in International Journals (indexed, reputed and peer reviewed Journals):			
	Sr. No.	Title and Authors	IF/ISSN No.
2013-14			
	1.	Nanocrystalline CoS Thin Films Prepared by Modified Chemical Bath Deposition Method, M. S. Sonawane, S. R. Gosavi and R. S. Patil, Journal of Chemical, Biological and Physical Sciences (An International Peer Review E-3 Journal of Sciences), MAY 2014 – JULY, 2014, Vol. 4, No. 3; 2416-2423,	E- ISSN: 2249 – 1929.
2014-15			
	2.	Characterization of nanocrystalline CdS thin films deposited on FTO by CBD for photosensor applications, C.P.Nikam, S. R. Gosavi , Advances in Applied Science Research, 2014, 5(5):267-272 (Corresponding Author)	ISSN: 0976-8610
	3.	Chemical synthesis of porous web-structured CdS thin films for photosensor applications, S.R. Gosavi , C.P. Nikam , A.R. Shelke, A.M. Patil, S.-W. Ryu, J.S. Bhat, N.G. Deshpande, Materials Chemistry and Physics, 160 (2015) 244-250. (Corresponding Author)	Impact Factor: 2.101 (Elsevier)
	4.	Effect of immersion cycles on structural, morphology and optoelectronic properties of nanocrystalline Ag ₂ S thin films deposited by SILAR technique, B. N. Kakade, C. P. Nikam , S. R. Gosavi, IOSR Journal of Applied Physics (IOSR-JAP), 6(6), (2014)6-12. (Corresponding Author)	E-ISSN: 2278-4861.
	5.	Influence of Cr Doping On Structural, Morphological and Optical Properties of SnO ₂ Thin Film Prepared By Spray Pyrolysis Technique, R. R. Kasar, S. R. Gosavi , A.Ghosh, N.G. Deshpande, R.P.Sharma, IOSR Journal of Applied Physics (IOSR-JAP), Volume 7, Issue 1 Ver. I (Jan.-Feb. 2015), PP 21-26.	e-ISSN: 2278-4861.
	6.	Influence of Thickness on the Photosensing Properties of Chemically Synthesized Copper Sulfide Thin Films, Abhiman Dattatray Dhondge, Sunil Rameshgir Gosavi , Narayani Madhukar Gosavi, Chatur Pundlik Sawant, Amar Maruti Patil, Abhijeet Ravsaheb Shelke, Nishad Gopal Deshpande, World Journal of Condensed Matter Physics, 5 (2015)1-9. (Corresponding Author)	Impact Factor: 0.78 ISSN Online: 2160-6927

	7.	Synthesis, Structural and Optoelectronic Properties of Nanocrystalline CdSe Thin Films Prepared By Chemical Bath Deposition Route, C. P. Nikam, Narayani Gosavi, R. R. Ahire and S. R. Gosavi , Journal of Scientific Review, Volume 5, Issue 1, Pages 238-244, 2015. (<i>Corresponding Author</i>)	e-ISSN: 0975-0754
	8.	Fabrication and Characterization of SnS Thin Films Prepared by SILAR Method, J. S.Suryawanshi, S. R. Gosavi and R. S. Patil, Nano Vision, Vol. 5(3), 31-38, March 2015 (<i>Corresponding Author</i>)	ISSN 2319-7633 (Online)
2015-16			
	9.	Chemical synthesis and study of structural and optoelectronic properties of CdS thin films: Effect of SILAR growth cycles, K. B. Chaudhari, S.R.Gosavi , JOURNAL OF ADVANCES IN PHYSICS, Vol. 9, No. 3 (2015)2461-2469. (<i>Corresponding Author</i>)	IF: 1.534 ISSN: 2347-3487 (Council for Innovative Research)
	10.	Effect of Light Illumination on Electrical Properties of Nanocrystalline Cadmium Sulphide Thin Film Prepared on ITO by Chemical Route, S. R. Gosavi , Journal of Pure Applied and Industrial Physics, Vol.5(11), 316-323, November 2015	ISSN 2319-8133 (Online)
	11.	Effect of Deposition Temperature on Growth and Properties of Nanostructure Cadmium Sulphide Thin Films by Chemical Bath Deposition Technique, D. A. Shende, Y. N. Rane, M. G. Raghuwanshi, Narayani M. Gosavi, and S. R. Gosavi , Journal of Chemistry and Chemical Sciences, Vol.5(12), 727-736, December 2015	ISSN 2319-7625 (Online)
2016-17			
	12.	Synthesis of flower shaped ZnO thin films for resistive sensing of NO ₂ gas, Y. N. Rane, D. A. Shende, M. G. Raghuwanshi, A. V. Ghule, V. L. Patil, P. S. Patil, S. R. Gosavi , N. G. Deshpande, Microchimica Acta, Microchim Acta (2017) 184:2455–2463 (<i>Corresponding Author</i>)	Impact Factor: 4.831 (Springer)
	13.	Chemical synthesis and characterization of CdSe thin films deposited by SILAR technique for optoelectronic applications K.B. Chaudhari, N.M. Gosavi, N.G. Deshpande, S.R. Gosavi, Journal of Science: Advanced Materials and Devices, 1 (2016) 476-481. (<i>Corresponding Author</i>)	ISSN: 2468-2179 (Elsevier)

14.	Effect of Uniform Decoration of Ag ₂ S Nanoparticles on Physical Properties of Granular TiO ₂ Thin Films Synthesized by Using Spin Coating Technique, R.A. Wagh, D.B. Salunke, S.R. Gosavi, R.S. Patil, JOURNAL OF NANO - AND ELECTRONIC PHYSICS, Vol. 8 No 4(2), 04080(5pp) (2016) (<i>Corresponding Author</i>)	Impact Factor: 0.612 (Sumy State University, Sumy, Ukraine)
15.	MORPHOLOGICAL EVOLUTION OF NANOCRYSTALLINE CdS THIN FILMS SYNTHESIZED BY TWO DIFFERENT CHEMICAL DEPOSITION TECHNIQUES, Narayani M. Gosavi, Shende, D. A., Rane, Y. N., Chaudhari, K. B., Kanke, V. M. and Gosavi, S. R. , Asian Journal of Science and Technology, Vol. 07, Issue, 11, pp.3820-3823, November, 2016. (<i>Corresponding Author</i>)	IF: 0.778 ISSN: 0976-3376

❖ Full length papers published in National / International conferences/seminars:		
2012-13		
1.	Effect of annealing on the optoelectronic properties of CuSe thin film for solar cell applications, Sunil R. Gosavi , H.K. Sadekar, Ramphal Sharma, Presented at NCANAP 2013 organised by Arts, Commerce and Science College Sonai.	
2.	Nanostructured ZnSe thin films prepared by Chemical Bath Deposition for Solar cell applications, H.K. Sadekar, Sunil R. Gosavi , Ramphal Sharma, Presented at NCANAP 2013 organised by Arts, Commerce and Science College Sonai.	
2015-16		
3.	Simple chemical route to deposit nanocrystalline cadmium sulphide thin film on conducting substrate and its characterization for the degradation of Methylene Blue, C. P. Nikam, B. N. Kakade, Narayani M. Gosavi, S. R. Gosavi , Presented at National Seminar on Recent Trends in Environmental Protection: Concern and Challenges [RTEPC] on 5th October 2015 organized by Arts, Commerce and Science College, Songir Dist. Dhule.	

❖ Research Monographs, Reference Books Published by International Publisher:			
2015-16			
Title of the Book	Year of Publication	Type of Book	Publisher & ISBN No.
1. Metal Chalcogenides Thin Films-Fundamentals and its Sensor Applications	2015	Research Reference Book	LAP LAMBERT Academic Publishing ISBN No.- 978-3-659-79632-6

❖ Editing of the proceedings of the Seminar / Symposium / Conference /Workshops:		
2012-13		
Title of the proceedings	Seminar / Symposium / Conference /Workshops	Publisher & ISBN No.
1. Souvenir- Advances in Nano Structured Materials and Their Applications (Editor)	National level seminar on, “Advances in Nanostructured Materials and their Applications”, sponsored by UGC (WRO) during 22nd - 23rd January 2013.	Prashant Publication, Jalgaon ISBN 978-93-82414-41-4

❖ Subject Books Published by National level / State level / Central Govt. publication:			
Title of the Book	Year of Publication	Level at which recommended	Publisher & ISBN No.
1. PHYSICS: PHY-241: Modern Physics	December 2016	S. Y. B.Sc.	Vrinda Publication Jalgaon ISBN: 978-93-85028-92-2
2. PRACTICAL PHYSICS Modern Physics, Optics and Laser	December 2016	S. Y. B.Sc.	Prashant Publication Jalgaon ISBN 978-93-82528-13-5
3. PHYSICS: PHY-241: Modern Physics	December 2016	S. Y. B.Sc.	Prashant Publication Jalgaon ISBN 978-93-82414-75-9
4. PHY: 242-OPTICS	December 2016	S. Y. B.Sc.	Prashant Publication Jalgaon ISBN 978-93-82414-78-0
5. PRACTICAL PHYSICS General, Waves and Oscillations, Electronics-I OR Instrumentation-I	July 2016	S. Y. B.Sc.	Prashant Publication Jalgaon ISBN 978-93-81546-80-2
6. PHY-231: Waves and Oscillations	July 2016	S. Y. B.Sc.	Prashant Publication Jalgaon

			ISBN 978-93-81546-26-0
7. PHY-232(A)-Electronics-I	July 2016	S. Y. B.Sc.	Prashant Publication Jalgaon ISBN 978-93-81546-32-1
8. PHY-121: Heat and Thermodynamics	January 2016	F.Y.B.Sc.	Prashant Publication Jalgaon ISBN 978-93-85019-83-8
9. PHY 112 Electricity and Magnetism	July 2015	F.Y.B.Sc.	Prashant Publication Jalgaon ISBN 978-93-85021-69-5
10. PHY121 : Heat and Thermodynamics	November 2013	F.Y.B.Sc.	Vrinda Publication Jalgaon ISBN 978-81-926449-1-2
11. PHYSICS: PHY-241: Modern Physics	November 2013	S.Y.B.Sc.	Vrinda Publication Jalgaon ISBN 978-81-926449-5-0
12. PHY 112: Electricity and Magnetism (Second Edition)	July 2012	F.Y.B.Sc.	Vrinda Publication Jalgaon ISBN 81-7815-013-1
13. PHY 111: Mechanics and Properties of Matter (Second Edition)	July 2013	F.Y.B.Sc.	Vrinda Publication Jalgaon ISBN 81-7815-012-3
14. PHY 231: Waves and Oscillations	July 2013	S.Y.B.Sc.	Vrinda Publication Jalgaon ISBN 81-7815-064-6
15. PHYSICS for S.Y.B.Sc. PHY 222: Applied Physics-I	2012	S.Y.B.Sc.	Vrinda Publication Jalgaon ISBN 81-7815-001-8
16. PHYSICS PRACTICAL PHY-103: Practical Course	2012	F.Y.B.Sc.	Vrinda Publication Jalgaon ISBN 81-7815-016-6

❖ National/International Conferences attended:	
2016-17	1. State level conference on Advanced Materials and Innovative Processing Ideas (AMIPI-2017) organized by M.J.M. A.S.C. College Karanjali Dist. Nashik during 27 th -28 th January 2017.
	2. National Conference on Electronic Materials, Thin Films and Its Applications (NCEMTFA-2016) organized by Department of Electronics & Physics, J.D.M.V.P. Co.-Op. Samaj's ASC College, Jalgaon (M.S.) India, during 9 th -10 th December 2016.
2015-16	3. National Conference on Chemical Synthesis of Nanomaterials and their Applications in Environment, organized by Dept. of Chemistry, G. T. Patil College, Nandurbar (M.S.) during 8 th - 9 th February, 2016.
	4. National Conference on Recent Developments in NANOMATERIALS & Their Applications (NC-RDNMA-2016) organized by Department of Electronics, G.T.P. College Nandurbar during 5 th - 6 th February, 2016.

	5. International Conference on Materials Science and Ionizing Radiation Safety & Awareness (ICMSIRSA-2016) organized by Department of Physics, Shivaji University, Kolhapur during 28 th -30 th January 2016.
2013-14	6. International Conference on Global Opportunities for Latest Developments in Chemistry and Technology-2014 (GOLD-CT-2014), organized by School of Chemical Sciences, North Maharashtra University, Jalgaon during 6-8 th February 2014.
	7. 2 nd International Conference on Physics of Materials and Materials Based Device Fabrication, (ICPM-MDF-2014) organized by Department of Physics, Shivaji University, Kolhapur during 13-15 th January 2014.
2012-13	8. National Conference on NANOMATERIALS: Applications and Properties (NCANAP 2013) organized by Arts, Commerce and Science College, Sonai during 22-23 rd February 2013.
	9. National Conference on Indian Development in Recent and Ideal Semiconductors for Novel Applications (NC-IDRIS-2012) organized by Arts, Commerce and Science College, Navapur during 6-7 th October 2012.

❖ National and International Seminars attended:	
2015-16	1. National Seminar on Recent Trends in Environmental Protection: Concern and Challenges [RTEPC] on 5 th October 2015 organized by Arts, Commerce and Science College, Songir Dist. Dhule
2014-15	2. 3 rd National Seminar on Physics of Materials and Materials Based Device Fabrication, (3 rd NSPM-MDF-2014) organized by Department of Physics, Shivaji University, Kolhapur during 19 th and 20 th December 2014.
2012-13	3. National Seminar on Advanced Materials and its Applications, organized by S.V.S. Arts and Science College Dondaicha during 1-2 nd February 2013.

❖ Organization of national or international conference/ seminar/ symposia/ workshop:			
	Title of conference/ seminar/ symposia/ workshop	Sponsored by	Date
2012-13	1. National level seminar on, "Advances in Nanostructured Materials and their Applications"	UGC (WRO)	22 nd - 23 rd January 2013

❖ Invited talk delivered in state/national/international conference/ seminar/ symposia/ workshop:			
	Title of conference/ seminar/ symposia/ workshop	Sponsored by	Date
2016-17	State level conference on Advanced Materials and Innovative Processing Ideas (AMIPI-2017) organized by	M.J.M. A.S.C. College Karanjali Dist. Nashik	27 th -28 th January 2017

❖ Session Chairman in state/national/international conference/ seminar/ symposia/ workshop:			
	Title of conference/ seminar/ symposia/ workshop	Sponsored by	Date
2012-13	National Seminar on Advanced Materials and its Applications	S.V.S. Arts and Science College Dondaicha	1 st -2 nd February 2013
2015-16	National Seminar on Recent Trends in Environmental Protection: Concern and Challenges [RTEPC]	Arts, Commerce and Science College, Songir Dist. Dhule	5 th October 2015
	National Conference on Recent Developments in NANOMATERIALS & Their Applications (NC-RDNMA-2016)	G.T.P. College Nandurbar	5 th - 6 th February, 2016.
2016-17	State level conference on Advanced Materials and Innovative Processing Ideas (AMIPI-2017) organized by	M.J.M. A.S.C. College Karanjali Dist. Nashik	27 th - 28 th January 2017

❖ State/national/international symposia/workshop attended:			
	Title of symposia/ workshop	Sponsored by	Date
2012-13	1. One day Workshop on Syllabus Framing of S.Y.B.Sc. Physics	Arts, Commerce and Science College Jamner.	10 th February 2013
2013-14	2. Workshop on restructuring the syllabus of T.Y.B.Sc. (Physics)	R. C. Patel Arts, Commerce and Science College Shirpur	23 rd and 24 th February 2014
2014-15	3. One day workshop on F.Y.B.Sc. Physics syllabus revision	Dr. P. R. Ghogare Science college Dhule	17 th January 2015
2015-16	4. Workshop on S.Y.B.Sc. PHYSICS syllabi Revision	Uttamrao Patil Arts and Science, Dahiwel Dist. Dhule	14 th January 2016
2016-17	5. Workshop on Syllabus Framing of Physics at T.Y.B.Sc.		25 th February 2017

❖ Organization of national or international symposia/Avishkar:			
	Title of conference/ seminar/ symposia/ workshop	Sponsored by	Date
2015-16	Worked as a team Manager in the District level Research Convention, "Avishkar 2015"	NMU, Jalgoan and P.S.G.V.P.M.'S ASC College Shahada	22 nd November, 2015

2016-17	Worked as a team Manager in the District level Research Convention, “Avishkar 2015”	NMU, Jalgaon and G.T.P. College Nandurbar	
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❖ Participation in Avishkar:			
	Title	Sponsored by	Date
2016-17	1. Study of electrical properties of Ag/CdSe Schottky diode prepared by low cost chemical synthesis technique (C. P. Nikam and S. R. Gosavi) Selected for University level presentation	NMU, Jalgaon and G.T.P. College Nandurbar	22 nd November, 2015
	2. Successive ionic layer adsorption and reaction (SILAR) trend for nanocrystalline cadmium selenide thin films growth (K. B. Chaudhari and S. R. Gosavi) Selected for University level presentation		
	3.		