



## DR. NAVINCHANDRA GOPAL SHIMPI

### *Professor*

Department of Chemistry

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Citations- 1100

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### Educational qualification

Degree	Year	Name of University/Board	Subject	Class
S.S.C	1994	Nasik Divisional Board, Nasik	Chemistry, Physics and Mathematics	I <sup>st</sup>
H.S.C	1996	Nasik Divisional Board, Nasik	Chemistry, Physics and Mathematics	II <sup>nd</sup>
B. Sc	2000	North Maharashtra University, Jalgaon	Chemistry	I <sup>st</sup>
M. Sc	2002	School of Chemical Sciences, NMU, Jalgaon	Chemistry with specialization in Polymer Chemistry	I <sup>st</sup>
B. Ed	2003	North Maharashtra University, Jalgaon	Science and Maths	I <sup>st</sup>
Ph.D.*		North Maharashtra University, Jalgaon	Degree awarded on 12/12/2006	

### Positions held

Institution	Position	Duration
DSM's Art's, Commerce & Science College, Jintur, Dist. Parbhani.	Lecturer	Sept 06- July -07
College of Engineering and Technology, Bambhori, Jalgaon	Lecturer	July-07- to July-08
University Institute of Chemical Technology, NMU, Jalgaon. (Formally known as UDCT, Jalgaon)	Assistant Professor	Aug 08- April 2014
Department of Chemistry, University of Mumbai, Santacruz (E)	Associate Professor	April 2014- till date

### Thrust area of research

- Nanomaterials and their functionalization.
- Biodegradable polymers and rubber nanocomposites
- Materials for gas sensing
- Nanocatalysts and their applications in organic transformation reactions
- Synthesis of carbon nanotubes and its functionalization
- Nanomaterials for effective degradation of dyes
- Synthesis of nanofibers and binary materials

## Research projects completed and ongoing

S. No	Name of funding agencies and letter no.	Title of the project	Project Cost (in Lacs)	Duration	Status
1.	DST, New Delhi (SR/FTP/ETA-58/2008 dated January 19, 2009)	Development of Technique for, Synthesis of Nanoparticles using Ultrasonication and Its Influence on Mechanical, Thermal and Weather Resistance Properties of Polymer Nanocomposites	08.40	3 yrs	Completed
2.	UGC, New Delhi (UGC/MRP/2009)	PBT PTT oligomerically nanocomposites	01.90	2 yrs	
3.	UGC/MRP/2010	Synthesis of polymer nanoparticles....it application in biodegradable polymer nanocomposites	15.50	3 yrs.	
4.	DRDO, New Delhi EPIPR/ER/0903780/M/01/ 1239	Synthesis, characterization of core-shell.....application in polymers.	19.95	3 yrs.	
5	CSIR, New Delhi 02(0023)/11/EMR – II/2012	Synthesis and Characterization of Nanoscopically Confined Conducting Polymer Nanocomposites	16.54	3 yrs.	
6	MHRD, New Delhi & World Bank	TEQIP, Seed Money	04.00	2 years	
7	AICTE, New Delhi 11-16/AICTE/RIFD/CAYT/POL-I/2013-14	AICTE Career Award for Young Teachers (CAYT)	9.00	3 yrs	
8	UGC, New Delhi (43-157/2014(SR))	Fabrication of functionalized nanomaterials for enhancement in activity of biodegradable polymers nanocomposites using vivo and vitro method	16.00	3 yrs	
9	ERIP/ER/1503214/M/01/1745	Green chemistry approach for the synthesis of smart nanostructures using ultrasonic cavitation technique with the study of particle formation mechanism and their application in speciality polymers	50.00	3 yrs	Ongoing
10	Indofil Industries Ltd, Thane	Development of novel nano additives	10.00	2 yrs	Completed

## Membership of professional societies

- Life Member of-**
1. Asian Polymer Association
  2. Indian Science Congress

## Research guide

**M. Tech (completed)-15 Ph. D (completed) - 13 Ph. D Thesis submitted- 00 Ph. D (ongoing)-06**

<b>Ph. D students</b>	
<b>Degree awarded</b>	
Mr. Ananda D. Mali	Studies on Effect of Nano Inorganic Fillers on Weather Properties of Elastomers ( <b>Awarded</b> )
Ms. Tanushree Sen	Studies on Synthesis and Characterization of Conducting Polymer Nanocomposites ( <b>Awarded</b> )
Mr. Mahesh D. Borane	Synthesis of Core-Shell Polymer Nanoparticles Using Micro emulsion Technique and its Application in Biodegradable Polymers ( <b>Awarded</b> )
Patil Vijay Narendranath	Performance of evaluation of ecofriendly artificial negative ion generator <b>Regd No.: NMU/11/Ph.D./Ele.Engg./24/2011 dated 23/02/2011 (Awarded)</b>
Bagul Sanjaykumar Jagannath	Investigation of image investigation techniques for monochrome and color images, <b>Regd No.: NMU/11/Ph.D./Ele.Engg./25/2011 dated 23/02/2011(Awarded)</b>
Mr. Harish A. Sonawane	Synthesis, characterization of core-shell.....application in polymers. <b>Regd No.: NMU/11/PhD/Chem. Tech./2/2012 dated 21/05/2012 (Awarded)</b>
Ms. Shirole Sharda	Green chemistry approach for the synthesis of nanoparticles and their applications in polymer composites <b>Regd No.: NMU/11/PhD/Chem/303/2012 dated 02/01/2012 (Awarded)</b>
Mr. Yogesh Suryawanshi	Development of multifunctional/nanomaterials for specialty polymers <b>Regd No.: NMU/11/PhD/Chem./22/2013 dated 02/05/2013</b>
Ms. Shilpa Jain	Technique development for synthesis of smart nanomaterials and their applications in sensing (176/12-01-2015/MUM) ( <b>Awarded</b> )
Ms. Minakshi Jha	Synthesis of efficient nanomaterials and their applications in polymer nanocomposites (178/08-05-2015/MUM) ( <b>Awarded</b> )
Mr. Milind Tamore	Development of intrinsically novel polymer nanocomposites filled with CNTs (188/04-11-2015/MUM) ( <b>Awarded</b> )
Ms Akshara Shah	Fabrication of nanofibers using spinning technique and its effect on mechanical and thermal properties of polymer nanocomposites (191/04-12-2015/MUM) ( <b>Awarded</b> )
Ms. Sarika Rasal	Development of an efficient and promising metal/metal oxide nanoparticle as a catalyst in selective organic reactions (Th./ICD/2016-17/2477) ( <b>Awarded</b> )
<b>Thesis submitted</b>	
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<b>Work under progress</b>	
Mr. Mujahid Khan	Fabrication of smart nanostructure and their effect on polymer degradation ( Th./ICD/2016-17/2669)
Ms. Shabnam Khan	Green chemistry approach for the synthesis of smart nanostructures using ultrasonic cavitation technique with the study of particle formation mechanism and their application in speciality polymers
Mr. Ware Pundalik	
Ms. Jolina Rodurgues	Design, synthesis and characterization of smart nanostructures and nanocomposites: Its application in gas sensing
Ms. Aruna Sudapalli	Development of hierarchical advance nanomaterials and their application in dye degradation
Mr. Jayesh Dixit	Technique development for the synthesis of novel nanocatalyst using bottom up approach and its application in organic transformation reactions

### Publications in Journals

**International- 95      National-02**  
**(List of few selective papers attached)**

S. No	Authors	Title of the paper	Journal [ISSN NO]	Vol. & pp	Year	Impact factor
1	<b>N. G. Shimpi</b> and S. Mishra,	Studies on effect of improved d spacing of montmorillonite on properties of PVC nanocomposites	Journal of Applied Polymer Science [1097-4628]	119, 148–154	2011	1.35
2	S. Mishra, <b>N. G. Shimpi</b> and A. D. Mali	Influence of stearic acid treated nano CaCO <sub>3</sub> on properties of silicone nanocomposites	Journal of Polymer Research [1572-8935]	18(6): 1715-1724	2011	2.019
3	S. Mishra, <b>N. G. Shimpi</b> and A. D. Mali	Investigation of Photo-oxidative effect on morphology and degradation of mechanical and physical properties of nano CaCO <sub>3</sub> silicone rubber composites	Polymer for Advance Technology [1099-1581]	23(2):236–246	2012	2.01
4	S. Mishra, <b>N. G. Shimpi</b> and A. D. Mali	Surface Modification of Montmorillonite (MMT) Using Column Chromatography Technique and Its Application in Silicone Rubber Nanocomposites	Macromolecular Research [1598-5032]	20(1), 44-50	2012	2.32

5	S. Mishra, <b>N. G. Shimpi</b> and A. D. Mali	Effect of surface modified montmorillonite on photo-oxidative degradation of silicone rubber composites DOI 10.1007/s13233-013-1035-4	Macromolecular Research [1598-5032]	21(5) 466-473	2013	2.32
6	S. Mishra, <b>N. G. Shimpi</b> and T. Sen	The Effect of PEG Encapsulated Silver Nanoparticles on the Thermal and Electrical Property of Sonochemically Synthesized Polyaniline/Silver Nanocomposite	Journal of Polymer Research [1572-8935]	20:49-58	2013	2.019
7	S. Mishra, <b>N. G. Shimpi</b> and A. D. Mali	Thermal, mechanical and morphological properties of surface-modified montmorillonite-reinforced viton rubber nanocomposites	Polymer International [1097-0126]	63(2): 338-346	2014	2.125
8	T. Sen, <b>N. G. Shimpi</b> , S. Mishra, and R. Sharma	Polyaniline/Gama Fe <sub>2</sub> O <sub>3</sub> Nanocomposites for room temperatures	Sensors and Actuators B:Chemical [0925-4005]	190, 120-126	2014	5.1
9	<b>N.G. Shimpi*</b> , Mahesh Borane, and S. Mishra	Preparation, Characterization and Biodegradation of PS:PLA and PS:PLA:OMMT Nanocomposites Using <i>Aspergillus niger</i>	Polymer Composites	35 (2), 263-272	2014	2.324
10	<b>N.G. Shimpi</b> , HA Sonawane, and S. Mishra	Effect of nano nAl(OH) <sub>3</sub> on thermal, mechanical & morphological properties of Millable poly urathene rubber	Polymer Bulletin	71 (2), 515-531	2014	1.438
11	Navinchandra G Shimpi, Dharmesh P Hansora, Rohit Yadav, Satyendra	Performance of hybrid nanostructured conductive cotton threads as LPG sensor at ambient temperature: Preparation and analysis	RSC Advances	5: 99253-99269	2015	3.84

	Mishra					
12	Navinchandra G Shimpi, Dharmesh P Hansora, Rohit Yadav, Satyendra Mishra	Performance of hybrid nanostructured conductive cotton materials as wearable devices: an overview of materials, fabrication, properties and applications	RSC Advances	5:107716-70	2015	3.84
13	Navinchandra G. Shimpi Tanushree Sen and Satyendra Mishra	Synthesis and Sensing Applications of Polyaniline Nanocomposites: A Review	RSC Advances	6: 42196-42222	2016	3.84
14	N.G.Shimpi T.Sen and S. Mishra	Room Temperature CO Sensing by Polyaniline/Co <sub>3</sub> O <sub>4</sub> Nanocomposites	Jouranl of Applied Polymer Science	133:42,44115	2016	1.860
15	Navinchandra G Shimpi, Shilpa Jain, Narayan Karmakar, Akshara Shah, DC Kothari, Satyendra Mishra	Synthesis of ZnO nanopencils using wet chemical method and its investigation as LPG sensor	Applied Surface Science (0169-4332)	390:17-24	2016	3.387
16	N. Karmakar , R Fernandes, Shilpa Jain, U.V. Patil, Navinchandra G. Shimpi, N.V. Bhat , D.C. Kothari	Room temperature NO <sub>2</sub> gas sensing properties of p-toluenesulfonic acid doped silver-polypyrrole nanocomposite	Sensors and Actuators Part B: Chemical	2017,242:118-126	2017	5.41
17	Navinchandra G Shimpi, Shilpa Jain, Narayan Karmakar, Akshara Shah, DC Kothari, Satyendra Mishra	Ammonia detection of 1-D ZnO/polypyrrole nanocomposite: Effect of CSA doping and their structural, chemical, thermal and gas sensing behavior	Applied Surface Science (0169-4332)	2017,396:1317-1325	2017	3.387
18	Tanushree Sen, Satyendra	A $\beta$ -cyclodextrin based binary dopant for	Materials Science and	2017:220:13-21	2017	2.552

	Mishra, Navinchandra G Shimpi	polyaniline: Structural, thermal, electrical, and sensing performance	Engineering: B			
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19	Tanushree Sen, Satyendra Mishra,S.S. Sonawane, Navinchandra G. Shimpi	Polyaniline/zinc oxide nanocomposites as room-temperature sensing layer for methane	Polymer Engineering and Science	Published online	2018	1.449
20	Navinchandra G. Shimpi* and Minakshi Jha	Green synthesis of zero valent colloidal nanosilver targeting A549 lung Cancer cell: In vitro cytotoxicity	Journal of Genetic Engineering and Biotechnology	Published online	2018	
21	Akshara Shah, Anuj Sharma, Shilpa Jain and Navinchandra G. Shimpi	Microwave assisted one pot three component synthesis of propargylamine, tetra substituted propargylamine and pyrrolo[1,2-a]quinolines using CuNPs@ZnO-PTh as a heterogeneous catalyst	New Journal of Chemistry	Published online	2018	3.269

### Papers presented in Conferences/Symposium

**National-40 International-60**

### Invited talks

S.No	Authors	Title of the talk	Conference	Date	Year	Place
1.	<b>N. G. Shimpi</b> and S. Mishra	Polymer Nanocomposites: Prospectus of Application	Workshop on Nanotech.	Dec 12-13	2008	Nasik
2.	<b>N. G. Shimpi</b> and S. Mishra	Sonochemical method for ...epoxy nanocomposites	ICPPC-10	Jan 15-17,	2010	Kottayam
3	<b>N. G. Shimpi,</b>	Biodegradable polymer based nanocomposites	APM-10, CIPET	Feb 20-22	2010	Bhubaneswar
4	<b>N.G. Shimpi,</b> S. Mishra and T. Sen	Metal and Inorganic Nanoparticles	First International Conference on 'Nanomedicine	Octr 23-25	2010	Beijing (China)
5	<b>N.G. Shimpi,</b> S. Mishra	Development of New Class of Polymer	Frontiers of Polymers and	Dec 15-17	2010	New Delhi



		Nanocomposites, Frontiers of Polymers and Advanced Materials	Advanced Materials (Macro-2010),			
6	<b>N.G. Shimpi,</b> S. Mishra and M.D. Borne	Biodegradation of polystyrene (PS)-poly Lactic acid (PLA) nanocomposites using <i>Bacillus subtilis</i>	Second APM 2011 , CIPET	March 25- 27	2011	Chenn ai
7	<b>N.G. Shimpi</b>	Biodegradable polymers	Govt. Engg. College Nashik	Aug. 14	2012	Nashi k
8	<b>N.G. Shimpi</b>	Biodegradable polymer nanocomposites	NCL, Pune	Dec 15-17,	2012	Pune
9	<b>N.G. Shimpi</b>	PU rubber nanocomposites: Preparation and application	VNIT, Nagpur	Jan 21-23	2013	Nagpu r
10	<b>N.G. Shimpi</b>	Metal nanoparticles and their oxides	VNIT, Nagpur	Feb 15-17	2013	Nagpu r
11	<b>N.G. Shimpi</b>	Polymer nanocomposites: Its degradation using <i>Aspergillus Niger</i>	CIPET, Lucknow	March 1-2	2013	Lukno w
12	<b>N.G. Shimpi</b>	Nanotechnology: Its applications in polymers	SVNIT, Surat	April 19-21	2013	Surat
13	<b>N.G. Shimpi</b>	Nanotechnology an emerging field of science and technology	Dr. BATU, Lonere	June 10-24	2013	Loner e
14	<b>N.G. Shimpi</b>	Metal nanoparticles and their oxides	RIT, Islampur	June 24-28	2013	Islamp ur
15	<b>N.G. Shimpi</b>	Synthesis and applications of nanomaterials	SDP on nanoscience and technology	August 6- 10	2013	Nande d
16	<b>N.G. Shimpi</b>	Nanotechnology in polymers	The polymer chemistry for mankind	December 28 <sup>th</sup>	2013	Auran gabad
17	<b>N.G. Shimpi</b>	Biodegradable polymer nanocomposites: Needs	SWMT 2014	January 08- 09	2014	SPS- NCL, Pune
18	<b>N.G. Shimpi</b>	International conference on polymers: vision and innovation	APA Young scientist award 2014 talk	February 19-21	2014	APA- IIT, New Delhi
19	<b>N.G. Shimpi</b>	Studies on photo- oxidative degradation of rubber nanocomposites using polymeric	APM 2015	February 20-22	2015	CIPE T, Chenn ai

		nanoparticles				
20	<b>N.G. Shimpi</b>	Novel method for the synthesis of nanomaterials & their application in polymeric material for societal benefits	Conference on nanoscience for sustainable development	February 23	2015	Nagpur
21	<b>N.G. Shimpi</b>	Advances in synthesis of nanomaterials and their applications	SDP on nanoscience and technology	February 9 <sup>th</sup>	2016	Aurangabad
22	<b>N.G. Shimpi</b>	Application of nanomaterials in polymers	APM 2016	February 12-14	2016	CIPE T, Chennai
23	<b>N.G. Shimpi</b>	Application of nanomaterials in membrane	SDP on RTNMT 2016	February 24-28	2016	VNIT, Nagpur
24	<b>N.G. Shimpi</b>	Nanomaterials: Synthesis and applications	Innovative Concepts and methodology in pharmaceutical Research II	March 19	2016	Shirpur
25	<b>N.G. Shimpi</b>	Applications of nanomaterials in polymers	STTP, SVNIT, Surat	October 15-22, 2016	2016	National
26	<b>N.G. Shimpi</b>	Nanomaterials synthesis: Applications to patenting	Refresher course, UoM, Mumbai	October 9-30, 2016	2016	National
27	<b>N.G. Shimpi</b>	ZnO oxide nanoparticles: Synthesis, characterization and applications	Sixth conference on Recent Advances in Polymer Technology, UICT, NMU, Jalgaon	January 27-28, 2017	2017	National
28	<b>N.G. Shimpi</b>	Nanomaterials: Its applications	Hislop College, Nagpur	February 9 <sup>th</sup> , 2017	2017	National
29	<b>N.G. Shimpi</b>	High performance polyimide films hybrid nanostructures and its property investigation	Advances in polymeric materials APM, 2017 CIPET, Chennai	February 12-13, 2017	2017	International
30	<b>N.G. Shimpi</b>	Advance multifunctional materials	NCMAM 2017, Nagpur	March 17-18, 2017	2017	National

31	<b>N.G. Shimpi</b>	Multifunctional nanomaterials	ISSHT in Current Scenario	April 22,2017	2017	International
32	<b>N.G. Shimpi</b>	Polymer nanocomposites as smart nanomaterials and its applications in high response gas sensors	APM 2018, LARMP CIPET, Bhubaneswar	February 2-4,2018	2018	International
33	<b>N.G. Shimpi</b>	Property investigation of ZnO NRs impregnated nanofibers using electrospinning technique	RAPT 2018, NMU, Jalgaon	February 16-17,2018	2018	National

### Patents

Sr. No	Name of the patent	Parent Application No	Current status
1	Process for Improved D-Spacing of Nanoclay	260237(526/MUM/2009)	<b>Granted</b>
2	A Process of Ultrasonic Cavitation Technique for Synthesis of Polymer Nanoparticles	36/MUM/2012	Under examination
3	Controlled Synthesis of Inorganic/Hydroxide Nanoparticles Using Continuous Ultrasonic Cavitation Technique	275710 (1671/MUM/2012)	<b>Granted</b>
4	An apparatus for continuous synthesis of carbon nano materials and a process for the same (process)	3179/MUM/2013	Under examination

### Conferences/Seminars/Courses organized

S. No	Event	Duration	Designation
1.	Recent Advances in Chemical Technology	January 6-7, 2010	Active member
2.	Role of Nanotechnology in Polymer and Chemical Industries	March 15, 2008	Active member
3.	First Conference on Recent Advance in Polymer Technology	January 30, 2009	Secretary
4.	Second Conference on Recent Advances in Polymer Technology	December 28-29, 2009	Treasurer
5.	Recent Advances in Chemical Engineering	March 30, 2010	Active member
6.	Certificate Course on Nanotechnology	May 11-15, 2010	Coordinator
7.	Third Conference on Recent Advance in Polymer Technology	January 15, 2011	Convener
8.	Second Professional Certificate Course on Nanotechnology	May 11-15, 2011	Coordinator
9.	SDP on Recent Advances in Polymer Technology	June 15-30, 2011	Coordinator

10	Fourth Conference on Recent Advance in Polymer Technology	March 2-3, 2012	Convener
11	SDP on Recent Advances in Nanoscience and Technology	June 15-30, 2012	Coordinator
12	Fifth National Conference on Recent Advances in Polymer Technology	March 21-22,2013	Convener
13	STTP on Nanoscience and Technology	June 20-25,2013	Coordinator
14	Refresher course in Recent Advances in Chemical Sciences and Technology	November 12 <sup>th</sup> - December 1 <sup>st</sup> , 2018	Coordinator

### Book published as author/edited

Biodegradable and biocompatible polymer composites-Processing, properties and application-Navinchandra G. Shimpi published by *Elsevier and Woodhead Publishers*

Carbon based nanomaterials and their nanocomposites for gas sensing by *Elsevier Publishers*

### Editorial board member of the journals

The Open Materials Science Journal  
Nanoscience and Nanotechnology-Asia  
International Journal of Chemical Sciences  
Current Applied Polymer Sciences