

**Dr. Mrs. Neha Yeshwanta Hebalkar FMAc**

**Scientist 'F'**

**Centre for Nanomaterials**

**International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI)**

Balapur PO, RCI Road, Hyderabad - 500005

Phone: +91 040 24452365; 9490747841

E-mail: [neha@arci.res.in](mailto:neha@arci.res.in); [nehaheba@gmail.com](mailto:nehaheba@gmail.com)



**Area of Expertise:** Nanoscience and Nanotechnology

#### **Education**

	Degree	Year	University/Institution
1.	SSC	1985	SSC board, Pune
2.	HSC	1987	HSC Board, Pune
3.	B.Sc. Chemistry	1990	Shivaji University, Kolhapur
4.	M.Sc. Chemistry	1992	Shivaji University, Kolhapur
5.	B.Ed.	1994	Pune University, Pune
6.	Ph.D.* Chemistry	2003	Pune University, Pune

\* Ph.D thesis title,: “Synthesis and characterization of various types of aerogels”

Guide: Prof. Mrs. Sulabha Kulkarni, University: Department of Physics, University of Pune, Pune

#### **Professional Experience**

S.No.	Positions held	Name of the Institute	From	To
1.	PDF	Indian Institute of Chemical Technology (IICT), CSIR, Hyderabad	Dec 2004	Dec 2005
2	Scientist 'C'	International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad	Jan 2006	Sept 2011
3	Scientist 'D'	ARCI, Hyderabad	Oct 2011	Sept 2015
4	Scientist 'E'	ARCI, Hyderabad	Oct 2015	Sept 2020
5	Scientist 'F'	ARCI, Hyderabad	Oct 2020	Till date

#### **Professional recognitions / awards / fellowships**

S.No	Name of Award	Awarding Agency	Year
1.	JRF	R&D Engineers, DRDO, Pune	1998

	SRF		2000
2.	M.R. Bhide Prize for best industrial oriented work	Raman Memorial Conference, Dept. of Physics, Unive of Pune	1999
4.	PDF	Nano Mission, DST	2004
5.	Best Oral presentation Award	International Conference on Advanced Materials and Processes for Defence Applications, Hyderabad	2019
6.	Honoured as Accomplished Women Scientist on the occasion of International Day of Women and Girls in Science	Anam Prem, NGO, Mumbai	2019
7.	Best Oral presentation Award	Stree 2020 National Conference, Jawaharlal Nehru University, Delhi	2022
8.	<b>Elected as a “Fellow”</b>	<b>Maharashtra Academy of Sciences</b>	<b>2022</b>
9.	Invited to give talk in 108 <sup>th</sup> Indian Science Congress held in Nagpur University	108 <sup>th</sup> Indian Science Congress	2023

### Performance Indicators

- Research papers: **67**
- Books chapters : **03**
- Popular science articles: **04**
- Total No. of citations (Google Scholar): **~3000**
- H index (Scopus) : **27**
- H index (Google Scholar) : **30**
- Patents: **7 Indian granted, 1 UK granted, 1 Indian applied**
- Conference presentations: **16**
- Invited talks: **24**
- Student guidance **M.Sc, M.Tech. B.Tech., Trainee projects: 60+**
- International visits: **04**

USA (Nano 2000 conference), USA (GM R&D, Detroit collaborative project), Korea (Nano Korea 2007 Conference) , UK (Inspection and training visit for XPS)

### Major Accomplishments in Technology Transfer

#### Contribution to technology development and transfer to industry

- **Nano silver for ceramic candle water filter (*Contributed as Team Member*)**

Contribution in in-depth analysis of nano silver loaded on ceramic filter candle, safety analysis of the process. Product of name “PuriTech” commercialized in Hyderabad and Secunderabad market.

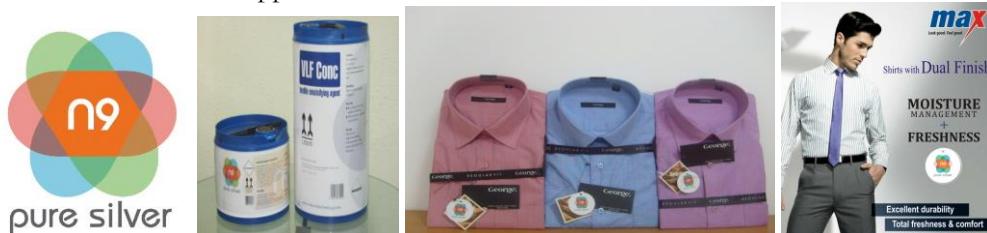


- **Nano silver for antibacterial textile application (*Contributed as Team Member*)**

Success story- ARCI received prestigious TDB National Award 2016 for successful commercialization of indigenous technology.

- UK and Indian patent granted.

Contribution in the development of a novel process to make antibacterial, highly stable nano silver aqueous suspension which is compatible to the industrial textile finishing process. Application has been developed for fabric, conducted functionality testing and completed product validation by the technology receiver. Product has been commercialized successfully. Antibacterial textiles with tag “n9” are currently available for various brands and apparels in Indian and international market.



- **Titania microspheres for self cleaning textiles (*Lead Role in the product development*)**

- Indian patent granted

Contribution in development of a manufacturing process for novel, multifunctional, nanostructured, titania microspheres tailored by bandgap engineering, its testing, validation of self-cleaning property and other properties on fabric. Technology has been successfully commercialized by the technology receiver. Self cleaning denim jeans pants of Splash and Flying Machine brands have been launched with “Sun Wash” tag in India and Dubai.



- **Silica aerogel based thermal insulation for Industrial Applications (*Lead role from concept to commercialization*)**

- Indian patent Granted.

“Large impact” technology contributing to energy conservation has been developed, transferred to Indian industry partner, aligning to the “**Make In India**” national initiative. The developed of silica aerogel based flexible sheet product has been envisioned to compete globally in the international market. This superior product has potential applications in the power generation plants, refineries, oil & gas, automotive, transportation, aerospace & defence industries. The manufacturing plant is being rolled out by the technology receiver.



### List of projects completed

S. No.	Project title and role	Sponsoring Agency	Duration	Outcome
1	<b>Team member</b> Silver nanoparticles incorporated in ceramic water filter candles for bacteria free drinking water	In-house	2006-2007	Technology transferred to industry
2	<b>Team member</b> Formulation of highly stable aqueous nano silver suspension for antibacterial textiles	Resil Chemicals, Bangalore	2008 - 2012	<ul style="list-style-type: none"> <li>• Technology Commercialized</li> <li>• Won TDB National Award for commercializing indigenous technology</li> <li>• Various antibacterial apparel and other textiles available in market in leading brands such as Van Heusen, People, Biba etc. under tags “Pure silver”, “Refresh”</li> <li>• ARCI received royalty for 7 years</li> </ul>
3	<b>Co-PI</b> Carbon aerogels and Sn Nanoparticles and their composites as anode material in Li-ion battery	General Motors, USA	2010-2011	Project completed successfully
4	<b>PI</b> Development of silica aerogels flexible sheet based thermal protection system for aerospace applications	DRDL, DRDO, Hyderabad	2013-2014	Project completed successfully

5	<b>Lead role</b> Development of titania spheres for self-cleaning textiles	Resil Chemicals, Bangalore	2012-2015	<ul style="list-style-type: none"> <li>Technology Commercialized</li> <li>Various self-cleaning, easy-cleaning, UV-protection apparel available in market in leading brands such as Color Plus, Splash, Flying Machine under tags “Sun Wash”, “Wearable Sunscreen”</li> <li>ARCI received royalty</li> </ul>
6	<b>Lead role</b> Development of silica aerogel based products for high temperature thermal insulation application	In-house	2015-2018	<ul style="list-style-type: none"> <li>Technology transferred for commercialization</li> <li>Received Rs.95 lakh as technology fee</li> </ul>
7	<b>Lead Role</b> <b>IC_MAP</b> Collaborative Research for Accelerated Development of Materials & devices for Energy harvesting and conservation Technologies with objective To Design and fabricate of thermo-regulating tiles based on solid-solid PCM and silica aerogel.	Sponsored by DST	2022-2025	<ul style="list-style-type: none"> <li>Ongoing project</li> <li>Sanctioned budget: Rs. 73 lakhs</li> </ul>

#### Details of materials / prototypes / devices developed

S. No	Name of the technology	Present TRL Status	Transferred to	Role	Year of completion
1	IC-MAP-DST Collaborative Research for Accelerated Development of Materials & devices for Energy harvesting and conservation Technologies	TRL 3	Sponsored project by DST	Lead	Ongoing 2022-2025
1	Nanoporous alumina-polymer beads for toxic fluoride removal from drinking water, “Point-of-use” device	TRL 5 (lab prototype and field trials)	In-house	Lead	Ongoing

2	Ambient pressure dried silica aerogel and its composites for thermal insulation application	TRL 4 (lab prototype)	In-house	Lead	Ongoing
3	Aerogel based thermally insulating paint additive for energy efficient buildings	TRL-3	In-house	Lead	Ongoing
4	Silica aerogel flexible sheets for thermal insulation applications	Technology transferred for commercialization:	In-house technology transferred to Aerogel One Ltd, Vapi	Lead	Aug 2018
5	Development of nanostructured titania spheres for self-cleaning textiles	Technology transferred and commercialized:	In-house developed technology transferred to Resil Chemicals Pvt. Ltd., Balgalore and successfully commercialized	Lead	Dec 2015
7	Detection of saliva level of glucose using plasmon resonance property in nano silver	Proof of concept	In-house	Lead	2014
6	Development of nano silver suspension for antibacterial textiles	Technology transferred and commercialized:	In-house developed technology transferred to Resil Chemicals Pvt. Ltd., Balgalore and successfully commercialized	Team member	Jan 2012
8	Silica @ Ag, AgCl, TiO <sub>2</sub> multifunctional core-shell particles for textile applications	TRL-4	In-house Supplied bulk quantity to Proctor &Gamble, UK	Lead	2011
9	Hydrophobic / hydrophilic nano silica for self cleaning textile applications	Closed at TRL-4	In-house Project closed	Lead	2011
10	Immuno-protective polymer encapsulation of stem cells for diabetes therapy	Proof of concept	Collaborative project with Global Hospital, Hyd	Lead	2011
11	Nano silver loading on BaSO <sub>4</sub> particles to use it as antibacterial application	Proof of concept at component level	Relisys Medical Devices, Hyderabad	Co-PI	2008

12	Development of porous carbon spheres for coating on heart stents	Proof of concept	Relisys Medical Devices, Hyderabad	Co-PI	2008
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### List of Patents

S.No	Patent Title	Name of Applicant(s)	Patent No.	Award Date	Agency/Country	Status
1	Improved method of producing highly stable aqueous nano titania suspension	Neha Yeshwanta <u>Hebalkar</u> and Tata Narasinga Rao	282988	2017	IPO	Granted
2	Improved process for the preparation of stable suspension of nano silver particles having antibacterial activity	J. Revathi, Neha <u>Hebalkar</u> , Tata Narasinga Rao	289543	2017	IPO	Granted
3	Improved process for the preparation of stable suspension of nano silver particles having antibacterial activity	J. Revathi, Neha <u>Hebalkar</u> , Tata Narasinga Rao	GB2496089	2014	GB	Granted
4	Improved method for producing carbon containing silica aerogel granules	Neha Hebalkar	290370	2017	IPO	Granted
5	Improved process for the preparation of bi-functional silica particles useful for antibacterial and self cleaning surfaces	Neha Hebalkar, Tata Narasinga Rao	291408	2018	IPO	Granted
7	An improved process for producing silica aerogel thermal insulation product with increased efficiency	Neha Hebalkar	305898	2019	IPO	Granted
8	Method of producing multifunctional self-assembled mixed phase titania spheres	Neha Hebalkar, Tata Narasinga Rao	335724	2020	IPO	Granted
9	Improved process for the preparation of stable suspension of nano silver having antibacterial activity	J. Revathi, Neha <u>Hebalkar</u> , Tata Narasinga Rao	2016110271 45	2016	IPO	Applied

## **Workshops / Trainings attend27**

1. Program on “Integrated Scientific Project Management for Women Scientists and Technologists” at Centre for Organizational Development (COD), Madhapur, Hyderabad during 7 -11 Jan 2019
2. Training on “Leadership Excellence through Effective Communications”, conducted by Prof R L Raina at ARCI, Hyderabad on 21 March 2017
3. International Training Program on Leadership and Career Development for Women Scientist & Technologists , 28 August -1 Sept 2015, Organized by DST and Indo-US forum in Indian Institute of Science Education and Research (IISER), Pune
4. “Imaging using GATAN camera in TEM” conducted in CCMB, Hyderabad by GATAN Company, 20 Aug. 2009
5. Attended “National Conference on Showcasing Cutting Edge Science & Technology by Women : An initiative of the National Task Force for Women in Science” Organized by Ministry of Science & Technology, Govt. of India was held on 8-9 March 2008 at Vigyan Bhavan, New Delhi, on the occasion of International Women’s Day.
6. International Summit on Rheology and Nanotechnology, Mumbai, 17th September, 2008

## **Characterization support**

Serve as in-charge of x-ray photoelectron spectroscopy (XPS), BET surface area analyzer, thermal conductivity measurement unit and team member of transmission electron microscopy (TEM). Characterization support was provided to many projects of ARCI and several external organizations to generate knowledge and revenue.

## **Other non-technical contributions**

- Served as safety officer in ARCI’s Centre for Nanomaterials
- Active Member-Secretary (2013-2021) and Presiding Officer (2021-2024) in ARCI’s Internal Complaints Committee (ICC) and Woman Welfare Cell for last eight years
- Served for Inventory Auditing at ARCI
- Organized several events such as Conferences, Annual day, International Women’s Day, Talks, etc.

## **Invited Talks**

1. An Invited talk on “Developing Applications of Nanoporous Aerogels for Energy Conservation” in **108-th Indian Science Congress** to be held at **Nagpur University** on 6th January 2023.
2. An Invited lecture on “Aerogels for energy conservation and saving” Faculty development program on “Innovations in Materials and Processing for Energy, Environment and Electronics” organized by **Marathwada Mitramandal's College of Engineering, Pune** in association with C-MET Pune and The Maharashtra Academy of Sciences on 9" February 2023
3. A plenary talk on Nanomaterials to Nanotechnology Journey from Lab to Market” in National Conference on "Innovative Approaches in Chemical Sciences" organized by **Sadguru Gadage Maharaj College, Karad** in collaboration with D. Y. Patil Eucation Society. Kolhapur, on 10" February 2023
4. An Invited online talk on “Silica aerogel based industrial thermal insulation” in 2nd Management Development Program ON “Innovations in Nanoscience and Nanotechnology for Industrial Applications,

organized by School of Nanoscience and Technology, **Shivaji University, Kolhapur** on 24th February 2023

5. On invitation, conducted an interactive session on POSH Act in “Awareness cum Sensitization Programme on POSH Act-2013” in **DLRL, DRDO, Hyderabad** on 6<sup>th</sup> December 2022.
6. Talk on “Nanotechnology and Its Applications in Everyday Life” lecture in Three Week Industrial Training Program for the faculty of Chemistry of Government Colleges in Telangana state organized by the UGC–HRDC, **Osmania University, Hyderabad**, 8 June 2022
7. Webinar on Commercialization of Nanotechnology Based Products: Opportunities & Prospects, One Day Management Development Program (MDP) on “Nanoscience and Nanotechnology- the Next Step to Industrial Innovations”, **Shivaji University, Kolhapur, Maharashtra**, 29 March 2022
8. Webinar on “Insight to Nanotechnology and essentials of nanomaterials in everyday life”, organized by Department of Engineering Sciences, **Marathwada Mitra Mandal's College of Engineering, Pune**, 9<sup>th</sup> July 2020
9. Webinar on “Nanoporous Aerogels for Energy Conservation” organized by **Amity Institute of Nanotechnology**, 4<sup>th</sup> April 2020
10. Chief Guest Talk on National Science Day Celebration with theme “Women in Science” Department of Physical Sciences, **Little Flower Degree College**, Uppal, 28<sup>th</sup> Feb 2020
11. Development of indigenous technologies based on nanomaterials: Journey from lab to market, Neha Hebalkar, **V. R. Siddhartha Engineering College**, Vijaywada, 18<sup>th</sup> Dec 2019.
12. Inspirational speech in Marathi for motivating girls opting science as education and career and talk on “Nanotechnology for better life” as a **Chief Guest, on the occasion of International Day for Women and Girls in Science, organized by a NGO “Aman Prem”** in Mumbai on 6 Feb 2019
13. “Amezing Nanomaterials” and “Nanomaterials for better life”, As a mentor in DST Inspire Camp organized by **Dayanand Science College, Latur**, Maharashtra on 22 Dec 2018
14. “Performing Supercritical Drying in HEL’s High Pressure Vessel to Produce Aerogels which are the World’s Best Thermal Insulators” in **User Conference of HEL, Uk held in Goa** during 25 – 26 February 2016.
15. “Surface Engineering of Nanomaterials”, **National Conference on “Impact of Nanoparticles and Nanomaterials on Health and Environment”** June 13<sup>th</sup> & 14<sup>th</sup>, 2014, Hyderabad
16. “Amezing Nanomaterials”, **Ravindra Bharati School**, Hyderabad, Feb 14, 2014
17. “Aerogel: the best thermal insulators”, **National Conference on Nanotechnology's Invisible Threat : Small Science, Big Consequences, Hyderabad** 26 September 2013
18. “Aerogels for thermal insulation in automotive applications”: **Hundai R&D Centre, Hyderabad**, June , 2013
19. “Aerogels for thermal insulation”, **BHEL’s vendor meeting, Chennai**, Jan 31, 2013

20. "Aerogels for Aerospace Applications": DRDL, 12 Nov 2011
21. "Semiconductor Nanoparticles: Synthesis Methods", **Jawaharlal Nehru Technological University**, Hyderabad, 1 Aug 2009
22. "Aerogel: Synthesis, properties and applications", **School of Engineering Sciences and Technology, Central University of Hyderabad**, 6 Feb 2009
23. "Development of aerogels for thermal insulations and other applications", **DST meeting**, ARCI, Jan 13, 2009
24. "Aerogels: Best Thermal Insulators", **DRDL, Hyderabad**, 1 May 200

#### **List of Conference presentations**

1. Nanomaterials to Nanotechnology Experiences of Journey walking through Valley-of-Death, Neha Hebalkar, Stree 2020 National Conference, Jawaharlal Nehru University, Delhi, 24-26 Nov 2022 (Best Oral Presentation Second Prize)
2. Development of world class thermal insulation product based on nanoporous areaogel, Neha Hebalkar, Online talk, 7th International Conference on Advanced Nanomaterials and Nanotechnology (ICANN2021), 14-17 December 2021
3. Silica Aerogel Based Thermal Protection System for Hypersonic Vehicles, Neha Hebalkar, Ananya Ghosal, S. Narendra, International Conference on Advanced Materials and Processes for Defence Applications. December 23-25 2019, Hyderabad (Received best Oral presentation Award)
4. Thermographic studies of aerogel composites, Keerthi Sanghamitra, Neha Hebalkar, 2<sup>nd</sup> International Conference on New Frontiers in Chemical, Energy and Environmental Engineering (INCEEE -2019), held at NIT – Warangal during 15-16 Feb, 2019
5. "Manufacturing Technology for Self Cleaning and Anti-bacterial Textiles" A. Yamini, S. Anandan, Neha Hebalkar, T. N. Rao, Bangalore Nano Conference, 3-4 March 3-4 , 2016
6. "Aerogels: New Generation Thermal Insulation Technology" S. Keerthi, Neha Hebalkar Bangalore Nano Conference, 3-4 March 3-4 , 2016
7. "Enhancing the Photocatalytic Activity of Anatase Titania Nanoparticles and a Novel Method to Test Self Cleaning Property" Neha Hebalkar, G Raghavendra, K. Nischala, Tata N Rao, International Conference On Nanoscience & Technology, Jan 20-23 2012, Hyderabad
8. "Electron Microscopy studies of bifunctional silica@titania,Ag core-shell particles", International Conference on Electron Nanoscopy, Neha Hebalkar, July 6-8 2011, Hyderabad
9. "Synthesis of silica@TiO<sub>2</sub>:Ag core-shell particles for self-cleaning and antibacterial textile applications" Neha Hebalkar, Snigdhatanu Acharya, T. N. Rao, International Workshop on Nanotechnology and Advanced Functional Materials held on July 9-11, 2009, in NCL, Pune

10. "Tunable Synthesis and Characterization of Porous Carbon Aerogel Nanospheres" Neha Hebalkar, K. Mohanapriya, K. Radha, Tata Narasinga Rao , NanoKorea 2007, Korea, August 29 – 31 2007
11. "Synthesis and Characterization of silica aerogels with transition metals", K. Mohanapriya and Neha Hebalkar International Conference on Recent Trends in Nanostructured, Materials and Their Applications, Hyderabad, December 19-20, 2007
12. "Synthesis and Characterization of Mercaptoethanol Capped Zinc Oxide nanoparticles" , J. Chimanpure, S. Ashtaputre, S. Marathe, N. Hebalkar, S. Kharrazi, Renu Pasricha, S. K. Kulkarni, International Conference on Nanomaterials (Nano 2005) Sivakasi, July 13 – 15, 2005
13. "Synthesis and Investigations of Cadmiun Sulphide and Zinc Sulphide Nanoparticles Attached to Surface Engineered Silica Particles", Neha Hebalkar, Anita Ethiraj, Sharmin Kharezzi, J. Urban, R. Fink, S. K. Kulkarni , " International conference on advances in surface treatment : research and Applications", Hyderabad 3 – 6 Nov. 2003
14. "Synthesis of Carbon Aerogels for Supercapacitor Application, Neha Hebalkar, Girish Arabale, S. R. Sainkar, S. D. Pradhan, Pushan Ayyub and S. K. Kulkarni Poster presentation in Sixth International Conference in Nanostructured Materials" Orlando, Florida, USA, 16 – 21 June 2002
15. "Synthesis of Nanoporous RF Aerogels", Neha Hebalkar, S. R. Sainkar, S.D. Pradhan, and S. K. Kulkarni, National conference on science and technology of Nanomaterials and Clusters, Institute of Physics and electronics, Barkatullah University, Bhopal, MP, India., 23 – 25 Nov. 2000
16. "Synthesis of Thermally Stable Zinc Sulphide Nanoparticles by Sol-Gel Method", Neha Hebalkar, Arun Lobo, R .S. Sainkar, S.D. Pradhan, W. Vogel, J. Urban , S. K. Kulkarni, National Conference on Physics of Nanophase Materials, Department of Physics, University of Pune, India, 18 – 20 Dec. 2000.

#### **Book Chapters by Dr. Neha Hebalkar**

S.No	Title	Author's Name	Publisher	Year of Publication
1	"Nanoporous Aerogels for Defense and Aerospace Applications"	Neha Hebalkar, Keerthi Sanghamitra, Yamini Ananthan, Murali Krishna Sudha	Springer, Cham	2020
2	"Nanomanufacturing for Aerospace" Chapter 5 in Book "Nano for Aerospace Applications"	S. Anandan, Neha Hebalkar, B. V. Sarada, Tata N Rao	Springer Nature	2017
3	"Aerogels for Energy Conservation and Saving" Chapter 38 in Book	A. Yamini, S. Keerthi, Neha Hebalkar	Wiley	2017

	Nanotechnology for Energy Sustainability”			
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### List of Popular Science Articles

- “Nanotechnology in Textiles”, Neha Hebalkar, YOJANA, a development monthly magazine by Ministry of Information & Broadcasting, October, 2021, pg 36-39
- “Nanoporous Aerogel: A wonder Material”, Technology Update article, Nanotech Insights, 2010, 1(1), pg 21-23
- “विस्मयकारी अल्पभार इंसुलेटिंग ऐरोजेल”, नेहा हेबालकर, सृजन’ हिन्दी गृह पत्रिका, 2018-2019, दूसरा अंक, 6-7

### List of Publications

Sr. No.	Author(s)	Title	Name of Journal	Vol.	Page	Year	Impact factor then	Impact factor now
67	Uddien Shaik, Riyaaz Karanjai, Malobika Joardar, Joydip Hebalkar, Neha Y., Borse, Pramod H.	Thermally stable electro catalytic nickel-phosphide film deposition on graphite for HER electrode application	Materials Science & Engineering B	285	115927-115932	2022	4.051	4.051
66	G. Nischay Kaushik, M. Nagini, M. Surya Prakash Reddy, Neha Y. Hebalkar, R. Vijay, B. S. Murty	Effect of Zr and ZrO <sub>2</sub> on aqueous corrosion behaviour of oxide dispersion strengthened 9Cr ferritic-martensitic steels	Materials Letters	324	132428-13231	2022	3.423	3.423
65	Anirudha Karati, Simanta Lahkar, Yixuan Hu, Ramkrishna Sahoo, Harish Kumar Adigilli, Neha Y. Hebalkar, Kolan Madhav Reddy, and Joydip Joardar,	Cu–Mo–S Mixed Chalcogenide Nanostructures for Pseudocapacitive Applications	ACS Appl. Nano Mater.	5	10203–10212	2022	5.097	5.097
64	Pavana SV Mocherla, Priya Ganesan, D Prabhu, Neha Y	Influence of post-synthesis NaCl flux treatment on the magnetic properties of	Journal of the American Ceramic Society	105 (2)	1116-1126	2022	3.784	3.784

	Hebalkar, R Gopalan, UV Varadaraju	<u>jet-milled SrFe<sub>12</sub>O<sub>19</sub> powders</u>						
63	Manoj Murugesan, Venkatesan Krishnamurthy, Neha Hebalkar, Mangalaraj Devanesan, Ponpandian Nagamony, Meena Palaniappan, Swaminathan K Krishnaswamy, Aihua Yua2, Can J	Nano-hydroxyapatite (HAp) and hydroxyapatite/platinum (HAp/Pt) core shell nanorods: Development, structural study, and their catalytic activity	Chem Eng.	99(1)	268-280	2021	13.07	13.273
62	Sangeetha Aula, Samyuktha Lakkireddy, Atya Kapley, Neha Hebalkar, Rakesh Kumar Sharma, Shantveer G Uppin and Kaiser Jamil	Evaluation Of biological effects and toxicity of Cetyl Trimethyl Ammonium Bromide stabilized Silver Nanoparticles and Cetyl Trimethyl Ammonium Bromide alone Following Intravenous Injection in Mice	Current Nanomedicine	11(1)	70-80	2021	-	-
61	Sangeetha Aula, Samyuktha Lakkireddy, Atya Kapley, Neha Hebalkar, Rakesh Kumar Sharma, Shantveer G Uppin and Kaiser Jamil	Induction of Oxidative Stress, DNA Damage, Hematological and Histopathological Effects of Silica Nanoparticles and Ethanol (solvent) in Swiss Albino Mice	Nano Progress	2(4)	32-39	2020	-	-
60	Sangeetha Aula, Samyuktha Lakkireddy, Atya Kapley, Neha Hebalkar, Rakesh Kumar Sharma, Shantveer G Uppin and Kaiser Jamil	In Vivo Interactions of Nanosized Anatase and Rutile Particles Following Oral Administration	Nano Progress		11-20	2020	-	-
59	Bevara Prasanth, BE; Babu Jayachandran, Neha Hebalkar, Raghavan Gopalan, S B	Improved thermal stability of						

	Chandrasekhar, Sivaprahasam Duraisamy	thermoelectric $Mg_2Si_{0.4}Sn_{0.6}$	Materials Letters	276	128204	2020	3.36	3.423
58	Wasekar, N.P., Hebalkar, N., Jyothirmayi, A., Ramakrishna, M., Sundararajan, G	Influence of pulse parameters on the mechanical properties and electrochemical corrosion behavior of electrodeposited Ni-W alloy coatings with high tungsten content	Corrosion Science	165	10840	2020	7.205	7.205
57	Keerthi Sanghamitra, K., Yamini, A., Venu Vinod, A., Hebalkar, N	Thermographic Studies of Aerogel Composites	Chemical Product and Process Modeling	15(2) 4	2019007	2020	-	0.95
56	Shobha N. Birajdar,a Neha Y. Hebalkar,b Satish K. Pardeshi, c Sulabha K. Kulkarni*a and Parag V. Adhyapak	Ruthenium-decorated vanadium pentoxide for room temperature ammonia sensing	RSC Adv	9	28735	2019	3.27	3.245
55	Pakki Tejassvi, Mohan E, Hebalkar Neha Y, Adduru Jyotirmayi, Bulusu Sarada V, Srinivasan Anandan, Krishna Mohan, Tata Narasinga Rao	Flexible and free-standing carbon nanofiber matt derived from electrospun polyimide as an effective interlayer for high-performance lithium-sulfur batteries	Journal of Materials Science	54 (12)	9075–9087	2019	3.553	4.22
54	Mocherla, P.S.V., Prabhu, D., Sahana, M.B., Ramachandra Rao, M.S., Sudakar	High temperature magnetic studies on Bi 1- $x$ Ca $x$ Fe 1- $y$ Ti $y$ O 3- $\delta$ nanoparticles: Observation of Hopkinson-like effect above $T_N$	Journal of Applied Physics	124 (7)	073904	2018	2.63	2.546
53	Vimal kumar K., Appa Rao BV , Hebalkar N. Y.,	Phosphorylated chitin as a chemically modified polymer for ecofriendly corrosion inhibition of	Research on Chemical Intermediate	43(10)	5811-5828	2017	-	2.914

		copper in aqueous chloride environment						
52	Haridas A K, Sharma C S, Hebalkar N. Y., Rao T N.	Nano-grained SnO <sub>2</sub> /Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> composite hollow fibers via sol-gel/ electrospinning as anode material for Li-ion batteries	Materials Today Energy	4	14-24;	2017	4.40	7.311
51	Neha Hebalkar	Development of nanoporous aerogel-based thermal insulation products: “Make in India” initiative	Current Science Special section: Women in Science – New Frontiers of Research,	112 (7)	1413-1420	2017	0.883	1.102
50	Tejasvi Pakki, Sudhakara S. Sarma, Neha Y. Hebalkar, Srinivasan Anandan, Krishna Mohan Mantravadi, and Tata N. Rao	Enhanced Electrochemical Performance of Electrospun SiO <sub>2</sub> Nanofibers as Binder-Free Anode	Chemistry Letters	46 (7)	1007-1009	2017	1.65	1.389
49	K.R.C. Soma Raju, D.S. Reddy, Neha Hebalkar, R. Subasri, G. Padmanabham	<u>Sol-gel derived solar selective coatings on SS 321 substrates for solar thermal applications</u>	Thin Solid Films	598 (1)	46-53	2016	2.00	2.183
48	Maharana, R., Bhanu Prasad, V.V., Roy, S., Prasad, D., Kumar, K., Paik, P., Hebalkar, N., Shukla, A., Bal, R.	Synthesis of High Temperature Stable Carbon Coated Metal Nanoparticles in AIPO <sub>4</sub> Based Matrix in Situ in Oxidative Atmosphere	Bal, R. <u>Journal of the American Ceramic Society</u>	99 (1)	64-71	2016	3.040	3.784
47	Jaimy, K.B., Vidya, K., Saraswathy, H.U.N., Hebalkar, N.Y., Warrier, K.G.K.	Dopant-free anatase titanium dioxide as visible-light catalyst: Facile sol-gel microwave approach	<u>Journal of Environmental Chemical Engineering</u>	3(2)	1277-1286	2015	3.44	5.876

46	Nitin P. Wasekar, A. Jyothirmayi, Neha Hebalkar, G. Sundararajan	<u>Influence of pulsed current on the aqueous corrosion resistance of electrodeposited zinc</u>	Surface and Coatings Technology	272	373-379	2015	1.998	4.158
45	Haridas, A K and Sharma, C S and V, Sritharan and Rao, T. N.	Fabrication and surface functionalization of electrospun polystyrene submicron fibers with controllable surface roughness	RSC Advances	4	12188-12197	2015	3.46	3.245
44	methods Dom, R., Chary, A.S., Subasri, R., Hebalkar, N.Y, Borse, P.H.	Solar hydrogen generation from spinel ZnFe <sub>2</sub> O <sub>4</sub> photocatalyst: Effect of synthesis	<u>International Journal of Energy Research</u>	39 (10)	1378-1390	2015	2.81	5.164
43	B.V. Appa Rao, K. Chaitanya Kumar, Neha Hebalkar	<u>X-ray photoelectron spectroscopy depth-profiling analysis of surface films formed on Cu–Ni (90/10) alloy in seawater in the absence and presence of 1,2,3-benzotriazole</u>	Thin Solid Films	556	337-344	2014	1.96	2.183
42	Alka Pareek, Rahul Purbia, Pradip Paik, Neha Hebalkar, Hyun Gyu Kim, Pramod H. Borse	<u>Stabilizing effect in nano-titania functionalized CdS photoanode for sustained hydrogen generation</u>	International Journal of Hydrogen Energy	39(9)	4170-4180	2014	3.769	5.816
41	Ibram Ganesh, Polkampally P. Kumar, Ibram Annapoorna, Jordan M. Sumliner, Mantripragada Ramakrishna, Neha Hebalkar, Gade Padmanabham, Govindan Sundararajan	<u>Preparation and characterization of Cu-doped TiO<sub>2</sub> materials for electrochemical, photoelectrochemical and photocatalytic applications</u>	Applied Surface Science	293	229-247	2014	2.99	6.707
40	Vijayasankar, K., Hebalkar, N.Y., Kim, H.G., Borse, P.H.	Controlled band energetics in Pb-Fe-Nb-O metal oxide	Journal of Ceramic	14 (4)	557-562	2013	0.248	0.61

		composite system to fabricate efficient visible light photocatalyst	Processing Research					
39	<u>Arbuj, S.S., Bhalerao, S.R., Rane, S.B., Hebalkar, N.Y., Mulik, U.P., Amalnerkar, D.P.</u>	Influence of triethanolamine on physico-chemical properties of cadmium sulphide	<u>Nanoscience and Nanotechnology Letters</u>	5(12)	1245-1250	2013	1.544	-
38	<u>Pareek, A., Hebalkar, N.Y., Borse, P.H.</u>	Fabrication of a highly efficient and stable nano-modified photoanode for solar H <sub>2</sub> generation	<u>RSC Advances</u>	3(43)	19905-19908	2013	3.708	3.245
37	<u>Dom, R., Kumar, G.S., Hebalkar, N.Y., Joshi, S.V., Borse, P.H.</u>	Eco-friendly ferrite nanocomposite photoelectrode for improved solar hydrogen generation	<u>RSC Advances</u>	3(35)	15217-15224	2013	3.708	3.245
36	<u>Thirumalairajan, S., Girija, K., Hebalkar, N.Y., Mangalaraj, D., Viswanathan, C., Ponpandian, N.</u>	Shape evolution of perovskite LaFeO <sub>3</sub> nanostructures: A systematic investigation of growth mechanism, properties and morphology dependent photocatalytic activities	<u>RSC Advances</u>	3(20)	7549-7561	2013	3.708	3.245
35	<u>Dom, R., Subasri, R., Hebalkar, N.Y., Chary, A.S., Borse, P.H.</u>	Synthesis of a hydrogen producing nanocrystalline ZnFe <sub>2</sub> O <sub>4</sub> visible light photocatalyst using a rapid microwave irradiation method	<u>RSC Advances</u>	2(33)	12782-12791	2012	2.562	3.245
34	<u>Garg, P., Debnath, T., Chelluri, L.K., Hebalkar, N.</u>	Feasibility of polymer based cell encapsulation using electrostatic layer by layer assembly	<u>Journal of Biomaterials and Tissue Engineering</u>	2(3)	215-219	2012		0.287

33	<u>Subasri, R.</u> , <u>Malathi, R.</u> , <u>Jyothirmayi, A.</u> , Hebalkar, N.Y.	Synthesis and characterization of CuO-hybrid silica nanocomposite coatings on SS 304	<u>Ceramics International</u>	38(7)	5731-5740	2012	1.751	4.527
32	<u>Sowntharya, L.</u> , <u>Lavanya, S.</u> , <u>Chandra, G.R.</u> , Hebalkar, N.Y., <u>Subasri, R.</u>	Investigations on the mechanical properties of hybrid nanocomposite hard coatings on polycarbonate	<u>Ceramics International</u>	38 (5)	4221-4228	2012	1.751	4.527
31	<u>Kumar, S.M.</u> , <u>Murugan, K.</u> , <u>Chandrasekhar, S.B.</u> , Hebalkar, N., <u>Krishna, M.</u> , <u>Satyanarayana, B.S.</u> , <u>Madras, G.</u>	Synthesis and characterization of nano silicon and titanium nitride powders using atmospheric microwave plasma technique	<u>Journal of Chemical Sciences</u>	124 (3)	557-563	2012	1.382	1.573
30	<u>Jaimy, K.B.</u> , <u>Safeena, V.P.</u> , <u>Ghosh, S.</u> , Hebalkar, N.Y., <u>Warrier, K.G.K.</u>	Photocatalytic activity enhancement in doped titanium dioxide by crystal defects	<u>Dalton Transactions</u>	41 (16)	4824-4832	2012	3.81	4.39
29	Rekha Dom, G. Sivakumar, Neha Hebalkar, Shrikant V. Joshi, Pramod H. Borse	<u>Deposition of nanostructured photocatalytic zinc ferrite films using solution precursor plasma spraying</u>	Materials Research Bulletin	47(3)	562-570	2012	2.105	4.641
28	Neha Y. Hebalkar, Snigdhatanu Acharya, Tata N. Rao	Preparation of bi-functional silica particles for antibacterial and self cleaning surfaces	Journal of Colloid and Interface Science	364	24–30	2011	3.07	8.128
27	V. Senthil Velan, G. Velayutham, Neha Hebalkar, K.S. Dattathreyan,	Effect of SiO <sub>2</sub> additives on the PEM fuel cell electrode performance	Int. J. Hydrogen Energy	36	14815–14822	2011		5.816
26	K. Nischala, Tata. N. Rao and Neha Hebalkar	Silica – silver core shell particles for antibacterial textile application	Colloids and Interfaces – B : Biointerfaces	82	203–208	2011	3.456	5.268

25	Kannekanti Lalitha; Gullapelli Sadanandam, Valluri Durga Kumari, Machiraju Subrahmanyam, Bojja Sreedhar, Neha Y. Hebalkar	Highly Stabilized and Finely Dispersed Cu <sub>2</sub> O/TiO <sub>2</sub> : A Promising Visible Sensitive Photocatalyst for Continuous Production of Hydrogen from Glycerol:Water Mixtures	Journal of Physical Chemistry C	114	22181-22189	2011	4.805	4.126
24	M.S. Archana, Neha Hebalkar, K. Radha, J. Joardar	Phase formation during mechanically activated annealing of nanocrystalline Cr–60at.%Al	Journal of Alloys and Compounds	501	18–24	2010	2.134	5.316
23	P. Kiruthika, R. Subasri, A. Jyothirmayi, K. Sarvani, N.Y. Hebalkar	Effect of plasma surface treatment on mechanical and corrosion protection properties of UV-curable sol-gel based GPTS-ZrO <sub>2</sub> coatings on mild steel	Surface & Coatings Technology	204	1270–1276	2010		4.158
22	B. Sreedhara, P. Radhikaa, B. Neelima, Neha Hebalkar and M. V. Basavewara Rao	Synthesis and characterization of polyaniline: nanospheres, nanorods, and nanotubes—catalytic application for sulfoxidation reactions	Polym. Adv. Technol	20 (12)	950–958	2009	1.678	3.665
21	Revathi Janardhanan, Murugan Karuppaiah, Neha Hebalkar, Tata Narsinga Rao	Synthesis and surface chemistry of nano silver particles	Polyhedron	28	2522–2530	2009		
20	B. Sreedhar, P. Radhika, B. Neelima, Neha Hebalkar, A.K. Mishra	Selective oxidation of sulfides with H <sub>2</sub> O <sub>2</sub> catalyzed by silica–tungstate core–shell nanoparticles	Catalysis Communications	10	39–44	2008	1.114	3.626
19	B. Sreedhar, P. Radhika, B. Neelima, Neha Hebalkar	Synthesis and characterization of silica–copper core shell	J. Chem. – An Asian Journal	3	1163–1169	2008	4.197	4.568

		nano particles – application for conjugate addition reactions						
18	S. Porel, N. Hebalkar, B. Sreedhar and T. P. Radhakrishnan	Palladium nanowire from precursor nanowire : crystal-to-crystal transformation via in situ reduction by polymer matrix	Adv. Funct. Mater	17 (14)	2550-2556	2007		18.808
17	A. Patra, N. Hebalkar, B. Sreedhar and T. P. Radhakrishnan	Formation and growth of molecular nanocrystals probed by their optical properties	J. Phys. Chem. C	111 (44)	16184-16191	2007	3.396	4.126
16	Anita S. Ethiraj, Sharmin Kharrazi, Neha Hebalkar, J. Urban, S.R. Sainkar, S.K. Kulkarni	Highly photostable dye entrapped core–shell particles	Materials Letters	61 (25)	4738-4742	2007	1.764	3.423
15	B. Sreedhar, Y. Aparna, M. Sairam, Neha Hebalkar	Preparation and characterization of HAP/carboxymethyl chitosan nanocomposites	Journal of Applied Polymer Science	105 (2)	928-934	2007	1.126	3.125
14	Neha Hebalkar, P. Radhika, B. Sreedhar, M. Lakshmi Kantam	Nanoengineering of surface modified silica particles to form core-shell and hollow nanospheres of iron oxide	J. Nanoscience and Nanotechnology	7 (10)	3662-3669	2007	2.139	1.134
13	B. Sreedhar, P. Radhika, B. Neelima, Neha Hebalkar	Regioselective ring opening of epoxides with amines using monodispersed silica nanoparticles in water	Journal of Molecular Catalysis A: Chemical	272 (1-2)	159 – 163	2007	1.359	5.062
12	A. Patra, N. Hebalkar, B. Sreedhar, M. Sarkar, A. Samantaa and T. P. Radhakrishnan	Tuning the size and optical properties in molecular nano/microcrystals : manifestation of hierarchical interactions	Small	2(5)	650-659	2006	6.045	13.281

11	Chimanpure J, Ashtaputre S, Marathe S, Neha Hebalkar, S. K. Kulkarni	<u>Synthesis and characterization of mercaptoethanol capped zinc oxide nanoparticles capped with organic molecules</u>	Synthesis and Reactivity in Inorganic Metal- Organic and Nano-Metal Chemistry	36	65	2006	-	-
10	Suchita Kalele, ravi Dey, Neha Hebalkar, J. Urban, S. W. Gosavi and S. K. Kulkarni Pramana	Synthesis and characterization of silica- titania core-shell particles	journal of physics	65(5)	787-791	2005	2.334	3.729
9	Neha Hebalkar, Girish Arabale, S. R. Sainkar, S. D. Pradhan, I. S. Mulla, Pushan Ayyub, K. Vijayamohanan, S. K. Kulkarni	Study of correlation of structural and surface properties with electrochemical behaviour in carbon aerogels	J. Mater. Sci.,	40 (14)	3777 - 3782	2005	0.046	4.22
8	Anita S. Ethiraj, Neha Hebalkar, S. R. Sainkar and S. K. Kulkarni	Photoluminescence study of Organic dye- doped silica Nanoparticles	J. Luminescence	114 (1)	15-23	2005	1.682	3.599
7	M. Bangal, S. Ashtaputre, S. Marathe, A. Ethiraj, N. Hebalkar, S. W. Gosabvi, J. Urban, S. K. Kulkarni	Semiconductor Nanoparticles	Hyperfine Interactions	160 (1-4)	81-94	2005	-	1.128
6	S. A. Kalele, S. S. Ashtaputre, N. Y. Hebalkar, S. W. Gosavi, D.N. Deobagkar, D. D. Deobagkar, S. K. Kulkarni	Optical Detection of Antibody using Silica – Silver Core-Shell Particles	Chem. Phys. Lett	404 (1-3)	136-141	2005	2.59	2.328
5	Neha Hebalkar, Sharmin Kharazzi, Anita Ethiraj, J. Urban, R. Fink, S. K. Kulkarni	Structural and Optical Investigations of SiO <sub>2</sub> - CdS Core-Shell on Silica Particles	J. Colloids and Interface Science	278(1)	107-114	2004	1.954	8.128
4	Anita S. Ethiraj, Neha Hebalkar , Renu Pasricha, J. Urban, C. Dem, M. Schmitt, W.	Enhancement of photoluminescence in Manganese doped ZnS	Journal of Chemical Physics	118(19)	8945- 8953	2003	3.108	2.348

	Kiefer, L Weinhardt, S. Joshi, R. Fink, C. Heske, C. Kumpf, E. Umbach and S. K. Kulkarni	nano particles due to a silica shell						
3	Anita S. Ethiraj, Neha Hebalkar, S. R. Sainkar, J. Urban and S.K.Kulkarni	Synthesis and Investigation of ZnS nanoparticles adsorbed on functionalized silica particles	Surface Engineering	20 (5)	367-372	2004	0.473	2.479
2	Neha Hebalkar, Arun Lobo, R .S. Sainkar, S.D. Pradhan, W. Vogel, J. Urban , S. K. Kulkarni	Properties of zinc sulphide nanoparticles stabilized in silica	Journal of Material Science	36(18)	4377-4384	2001	0.784	4.22
1	Neha Hebalkar, S. K. Kulkarni	Carbon aerogels	Physics Education	18 (1)	61	2001	0.265	0.699