

Bio-Data

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Research Interest: Nanomaterials synthesis, Thin film synthesis, Solar cells synthesis, Fuel cells and Water splitting, Nanofluid synthesis and applications, Nanocatalysis.

Teaching and Research Experience: 13 years of Research as well as U.G. & P.G. Teaching

Publications: (Total No.=27)

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| i. | Papers published in SCI/SCIE Journals: 12 | (Annexure-I) |
| | International Conferences/Proceedings: 12 | (Annexure-II) |
| | National Proceedings: 04 | (Annexure-III) |

Awards: National Award for Best Ph.D. Thesis and Research-2014 given by IChE in Chemical Engineering/Technology for the research work on **Synthesis and applications of nanoparticles**

Citations Records: Citations: 124 (Source: Google Scholar Citations: as on 26-September-
h-index (Hirsch index): 6

Positions Vaccant:

At present, I have two research fellow positions vacant under me.

Other Information:

Research Projects: 2 completed, 1 ongoing

Ph.D. Students Guided: 2 ongoing

M.Tech Dissertations Guided: 4 completed, 1 ongoing

Paper reviewer in International Journals: 5

Workshops/Summer Schools/WINTER Schools/Short term Courses organized: 2

Workshops/Summer Schools/WINTER Schools/Short term Courses attended:

Expert Lectures delivered: 10

Research Projects: 03

(1) Institute Research Grant (Assistant Professors (Rs. 9.80 Lakhs) From S. V. National Institute of Technology, Surat for **Nano structured photoelectrode synthesis, characterization and applications in solar energy conversion** for 2 years (2014-2016).

(2) TEQIP project grant of the Institute for UG student (Rs. 50,000/-) for “Synthesis, characterization and optimization of Nanostructured photoelectrochemical material for water splitting” Name of the Student: Kishan Soni and Deepak Saini, Supervisors: Dr. Jignasa N. Solanki, Dr. Dimple Shah and Dr. Ranjan K Pati (2013-2014).

(3) Research project grant of the Institute (TEQIP sponsored) for UG student (Rs. 50,000/-) for “Flow meter using linear variable differential transformer (LVDT)” Name of the Student: Garvit Garg, Supervisors: Dr. Jignasa N. Solanki, Dr. P. Kundu and Dr. Dimple Shah (2013-2014).

Ph.D. Students Guided: 02 ongoing

Sr. No.	Student Name (Adm. No.)	Title of Thesis	Academic year of Dissertation	Co-Supervisor (if any)
1.	Sidhdhant Patel (DS15CH001)	Nanomaterials preparation and its applications for solar cell applications	Ongoing	---
2.	Nitukumari Zha (DS14CH007)	Thin film preparation, characterization and its applications in solar energy capturing	Ongoing	Dr. Sanjay R. Patel

M.Tech/M.E. Dissertations Guided: 04 completed, 01 ongoing

Sr. No.	Student Name (Adm. No.)	Title of Thesis	Academic year of Dissertation	Co-Supervisor (if any)
1.	Preeti Mishra (P11CH030)	A study on synthesis of nanoparticles, proton exchange membranes and membrane electrode assembly for direct methanol fuel cell.	2012- 2013	Dr. Z.V.P. Murthy
2.	Mangesh Lanjewar (P12CH014)	A study on nanostructured thin film preparation and its application in sensitized solar cells	2013-2014	-----
3.	Mohit Singh (P12CH005)	A study on efficient nanostructured photo anode synthesis and its optimization for applications in photoelectrochemical cells for solar energy capturing	2013-2014	Dr. A.K. Jana
4.	Yashad Joshi (P13CH002)	A study on advanced nanostructured thin film solar cells: Synthesis, characterization and applications	2014-2015	----
5.	Avinash Jadhav (P14CH002)	Thin film preparation and its applications for solar cell applications		

Paper reviewer in International Journals

1. Advanced Powder Technology (Elsevier Scientific Publication) (SCIE Journal)
2. Surface and Coating Technology (Elsevier Scientific Publication) (SCIE Journal)
3. American Journal of Environmental Protection (Science Publishing Group, USA)
4. American Journal of Nanoscience and Nanotechnology (Science Publishing, USA)
5. National Journal of Industrial Engineering

Testing/Consultancy:

Testing of nanoparticles size, analysis of various compounds and solutions, such as, paint, Lipoid, dye and pharmaceutical compounds for and chemical structure.

Memberships in professional bodies:

Life Member of IChE (India Institute of Chemical Engineers), INDIA (LM-53987)

International Recognition:

1. Chaired a Technical Session on Thermodynamics and Energy Technology at International Conference, FOOTPRINTS-2007 held at Faculty of Technology, M. S. University, Baroda, India, 18 February, 2007.
2. Chaired a Technical Session at paper presentation competition at AUTOFEST '09, national level auto-tech festival, organized by Society of Automotive Engineers (SAE) at SVNIT from 31 October-2 November, 2009.

Expert Lectures delivered: 10

(1) **"Synthesis of Metal and Semiconductor Nanoparticles via Chemical Synthetic Routes"** on 22 January, 2009 at a short term course on Nanotechnology: A Sustainable Alternative to Environment, organized at SVNIT, Surat, India during 19-23 January, 2009.

(2) **"Nanofluids and its applications"** on 21 January, 2010 at a short term course on Nanomaterials organized at SVNIT, Surat, India

(3) **"Advance Technology and use of nanotechnology for Tertiary treatment of wastewater of Textile units"** at Workshop Jointly organized by GPCB and EcoSarjan for Effluent Treatment Plant Employees training at Surat, during 1 – 5 October, 2012.

- (4) **“Recent Trends in Advanced Nanomaterials Synthesis and Applications in Nanocatalysis and Energy Sector”**, on 4-9-13 at TEQIP-II sponsored STTP on "Advanced Materials, Characterization and Applications in Materials Science and Engineering" organized by Applied Chemistry Department, SVNIT, Surat during 2-6 September, 2013
- (5) **“Nanomaterials: Synthesis, Characterization and Applications”** on 14-10-2013 at TEQIP-II Sponsored Short-Term Training Program on “Recent Trends in Nanomaterials Synthesis, Characterization and Applications”, Department of Chemical Engineering, SVNIT, Surat during 14th – 18th October 2013.
- (6) **“Enhanced Properties at Nanoscale”** on 15-10-13 at TEQIP-II Sponsored Short-Term Training Program on “Recent Trends in Nanomaterials Synthesis, Characterization and Applications”, Department of Chemical Engineering, SVNIT, Surat.
- (7) **“Size, Stability and Chemical Characterization of Nanomaterials”** on 17-10-13 at TEQIP-II Sponsored Short-Term Training Program on “Recent Trends in Nanomaterials Synthesis, Characterization and Applications”, Department of Chemical Engineering, SVNIT, Surat
- (8) **“Nanocatalysis in production and in wastewater treatment”** on 18-10-13 at TEQIP-II Sponsored Short-Term Training Program on “Recent Trends in Nanomaterials Synthesis, Characterization and Applications”, Department of Chemical Engineering, SVNIT, Surat.
- (9) **“Recent Advances in Separation processes in Chemical Engineering and Nanotechnology”** on 23-6-14 at one week Short-Term Training Program on “Recent Advances in Separation processes in Chemical Engineering and Nanotechnology” at V.V.P. Engineering College, Rajkot, India.
- (10) **“Synthesis and characterization of TiO₂ nanoparticles and doped nanoparticles for applications in photocatalytic degradation of toxic compounds”** on 23-6-14 at one week Short-Term Training Program on “Recent Advances in Separation processes in Chemical Engineering and Nanotechnology” at V.V.P. Engineering College, Rajkot, India.
- (11) **“Nanomaterials synthesis and Applications”** at International Conference, Chemcon-14, Chandigarh, Punjab, India, on 28 December, 2014.
- (12) **“Hybrid solar cell”** at STTP on “Solar photovoltaic energy: contemporary technologies and recent advances” on 8th October 2016 at Physics Dept., SVNIT, Surat.
- (13) **“Thin film Solar cell: Preparation and applications in sensitized solar cell”** at STTP on “Solar photovoltaic energy: contemporary technologies and recent advances” on 8th October 2016 at Physics Dept., SVNIT, Surat.

Number of Summer/Winter Schools/ Training Programmes Organized: 02

1. Organized as a Coordinator, TEQIP-II Sponsored One-Week Short-Term Training Program on “Recent Trends in Nanomaterials Synthesis, Characterization and Applications”, Department of Chemical Engineering, S.V. National Institute of Technology, Surat, Gujarat, India, during 14th – 18th October 2013. (Coordinators: Dr. J. N. Solanki and Dr. Z.V.P. Murthy)
2. Organized a two day workshop on “Matlab for Process Engineers” as a Member of organizing committee sponsored by ISTE from 16th to 18th July, 2004 at V.V. P. Engineering College, Rajkot, Gujarat, India.

Various Academic and Administrative Responsibilities/Activities: 11

1. Departmental TEQIP-II Coordinator
2. In-charge of B.Tech-II year (Chemical) Class Registration Member of stock-verification committee
3. Member of Institute Sparsh Committee
4. Appointed Member of Departmental committee for Accreditation 2008.
5. Department Instrumentation and Process control Lab in charge
6. Member of Scrutiny Committee for student elections at institute level
7. Member of Institute student counseling Committee
8. Member of Discussion Committee of Syllabus revision workshop for UG and PG program.
9. Served as Factotum in the final examination, invigilator in different national level exams
10. Worked as Asst. Presiding Officer in State Assembly Election & Corporation Election.
11. Worked as Asst. Presiding Officer in National Assembly Election & Corporation Election

Annexure-I

Papers Published in International Journals (SCI/SCIE; Science Citation Index Expanded): **12**

1. **Jignasa N. Solanki** and Z.V.P. Murthy, Highly Monodisperse and Sub-nano Silver Particles Synthesis via Microemulsion Technique, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, Vol. 359(No.1-3) (2010) 31-38 (Elsevier Scientific Publication, The Netherlands) **(Impact Factor: 2.130)**
2. **Jignasa N. Solanki**, R. Sengupta, and Z. V. P. Murthy, Synthesis of Copper Sulphide and Copper Nanoparticles with Microemulsion Method, *Solid State Sciences*, Vol.12(No.9) (2010)1560-1566. (Elsevier Scientific Publication, The Netherlands) **(Impact Factor: 1.828)**
3. **Jignasa N. Solanki** and Z.V.P. Murthy, Preparation of Silver Nanofluids with High Electrical Conductivity, *Journal of Dispersion Science and Technology* Vol.32(No.5)(2011) 724-730 (Taylor & Francis Publication, USA) **(Impact Factor: 0.628/2010)**
4. **Jignasa N. Solanki** and Z.V.P. Murthy, Reduction of Nitro Aromatic Compounds Over Ag/Al₂O₃ Nano Catalyst Prepared in W/O Microemulsion: Effects of Water-to-Surfactant Mole Ratio and Type of Reducing Agent, *Industrial and Engineering Chemistry Research*, Vol. 50(No.12) (2011) 7338–7344 (American Chemical Society, USA) **(Impact Factor: 2.071/2010)**
5. **Jignasa N. Solanki** and Z.V.P. Murthy, Controlled size silver nanoparticles synthesis with water-in-oil microemulsion method: A topical review, *Industrial and Engineering Chemistry Research*, Vol. 50(No.22) (2011) 12311–12323. (American Chemical Society, USA) **(Impact Factor: 2.071/2010)**

6. **Jignasa N. Solanki**, Z. V. P. Murthy, Reduction of 4-chlorophenol by Mg and Mg-Ag bimetallic nanocatalysts, *Industrial & Engineering Chemistry Research*, Vol.50(No.24) (2011) 14211-14216. (American Chemical Society, USA) **(Impact Factor: 3.535/2013)**
7. Shilpa Bothra, **Jignasa N. Solanki**, Suban K. Sahoo, Functionalized Silver Nanoparticles as Chemosensor for pH, Hg²⁺ and Fe³⁺ in Aqueous Medium" *Sensors and Actuators B: Chemical*, Vol.188 (No.11) (2013) 937-943. (Elsevier Scientific Publication, The Netherlands) **(Impact Factor: 3.535/2013)**
8. Preeti S. Mishra, **Jignasa N. Solanki**, Z.V.P. Murthy, TiO₂ Nanoparticles Synthesis for Application in Proton Exchange Membranes, *Crystal Research and Technology*, Vol.48(No.11) (2013) 969–976. DOI:10.1002/crat201300179(Wiley-Blackwell, USA) **(Impact Factor: 1.120/2012)**
9. Shilpa Bothra, **Jignasa N. Solanki**, Suban K. Sahoo, John F. Callan, Anion-driven selective colorimetric detection of Hg²⁺ and Fe³⁺ using functionalized silver nanoparticles, *RSC Advances*, 2014,4, 1341-1346 **(Impact Factor: 2.562/2012)**
10. Jignesh V. Rohit, **Jignasa N. Solanki**, Suresh Kumar Kailasa, Surface modification of silver nanoparticles with dopamine dithiocarbamate for selective colorimetric sensing of mancozeb in environmental samples, *Sensors and Actuators B: Chemical*, Vol. 200(No.01) (2014) 219–226. (Elsevier Scientific Publication, The Netherlands) **(Impact Factor: 3.535/2013)**
11. Vaibhav N. Mehta, **Jignasa N. Solanki**, Suresh Kumar Kailasa, Selective visual detection of Pb(II) ion via gold nanoparticles coated with a dithiocarbamate-modified 4'-aminobenzo-18-crown-6, *Microchim Acta* (Springer) **(Impact Factor: 3.43/2014)**
12. Jignasa N. Solanki, Preeti S. Mishra and ZV.P. Murthy*, In Situ Prepared TiO₂ Nanoparticles Crosslinked Sulfonated PVA Membranes with High Proton Conductivity for DMFC, *Química Nova*, Vol.39(No.6) (2016) 704-711. DOI: 10.5935/0100-4042.20160076 (Sociedade Brasileira de Química, Brazil) **(Impact Factor: 0.661/2015)**
13. Mangesh Lanjewar, Jignasa V. Gohel, Enhanced Performance of Ag Doped ZnO and Pure ZnO Thin Films DSSCS Prepared by Sol Gel Spin Coating, Accepted Manuscript for publication in *Inorganic and Nano-Metal Chemistry*, DOI: 10.1080/24701556.2016.1241275, 2016 (Taylor & Francis Publication, USA) **(Impact Factor: 0.493/2015)**

Annexure-II

Papers Published/Presented in International Conferences/Proceedings: 12

1. **Jignasa N. Solanki**, Z. V. P. Murthy, "Use of nanofluids in heat transfer applications", *Proceedings of International Symposium on Advances in Mechanical Engineering (AME-2008)*, Surat, December 15-17, 2008.
2. **Jignasa N. Solanki**, "Novel biogas plant design for the rural development", *Proceedings of International Symposium on Renewable Energy Asia and 4th SEE Forum Meeting (REA 2008)*, Indian Institute of Technology, Delhi, December 11-13, 2008.
3. **Jignasa N. Solanki**, S. P. Dabke, "Phase Equilibria from Equation of States", *Proceedings of International Symposium & 59th Annual Session of IChE in association with International Partners (CHEMCON-06)*, Bharuch, December 27-30, 2006.
4. **Jignasa N. Solanki**, K.G. Jadav, M.H. Joshipura, "Removal of Synthetic Color Dyes from textile effluent using low cost adsorbents", *Proceedings of International Symposium & 59th Annual Session of IChE in association with International Partners (CHEMCON-06)*, Bharuch, December 27-30, 2006.
5. **Jignasa N. Solanki**, "Removal of VOCs and Toxics from Airborne Emissions using Biofilter", *Proceedings of International Symposium & 58th Annual Session of IChE in association with International Partners (CHEMCON-2005)*, New Delhi, December 14-17, 2005.
6. **Jignasa N. Solanki**, "Alternative Sweeteners- A Raising Demand", *Proceedings of International Symposium & 56th Annual Session of IChE (CHEMCON-2003)*, Bhubneshwar, December 19-22, 2003.
7. **Jignasa N. Solanki**, "Simulation of phenol removal using Emulsion Liquid Membrane", *Proceedings of International Symposium & 56th Annual Session of IChE (CHEMCON-2003)*, Bhubneshwar, December 19-22, 2003.
8. **Jignasa N. Solanki**, B. Sengupta, "ELM - A Novel Separation Technique", *Proceedings of International Symposium & 56th Annual Session of IChE (CHEMCON-2003)*, Bhubneshwar, December 19-22, 2003.
9. **Jignasa N. Solanki**, "Application of Molecular Sieves", *International Conference of Chemical Engineering, COLLISION 2000*, September 24-26, 2000, Nadiad, Gujarat, India.
10. **Jignasa Solanki**, Z.V.P. Murthy, Monodisperse and Subnano Silver Nanoparticles Synthesis with Microemulsion Method, *Proceedings of the "Annual International Conference on Materials Science, Metal & Manufacturing" (M3 2011)*, Global Science and Technology Forum (GSTF), Singapore, December 12-13, 2011, pp.102-10106. DOI: 10.5176/2251-1857_M318.

11. **Jignasa Solanki**, Z.V.P. Murthy, Nanofluid: A Smart and Environment Friendly Fluid for Heat Transfer Applications Reducing Pollution, *Paper presented at the "4th International Congress of Environmental Research (ICER-2011)"*, held at S.V. National Institute of Technology, Surat, India, December 15-17, 2011. (Paper No.559)
12. Mohit Singh, Mangesh Lanjewar, **Jignasa N. Solanki**, Synthesis of antimony doped ZnO and silver doped ZnO for capturing visible radiation range in photoelectrochemical cell applications, *Paper presented at the International Symposium 66th Annual Session of Indian Institute of Chemical Engineers (CHEMCON-2013)*, at Institute of Chemical Technology, Mumbai, 27-30 December, 2013.
13. Avinash Jadav, Yashad Joshi, **Jignasa N. Solanki**, Fabrication of thin film solar cell by low cost spray pyrolysis method, 6th National Conference on Recent Advances in Manufacturing (RAM-2016), 12-14 May, 2016
14. Nitu kumari, **Jignasa N. Solanki** and Sanjaykumar R. Patel, Zinc oxide thin film preparation, characterization and application in solar cells. *Paper presented at the International conference on Macromolecules: Synthesis, morphology, Processing, Structure, Properties and Applications (ICM 2016)*, at Kottayam, Kerala (India), 13-15 May 2016.
15. Nitu Kumari, **Jignasa V. Gohel** and Sanjaykumar R. Patel, Effect of type of precursor on optical, structure and Morphological properties of ZnO thin films, *Presented at SVNIT: Annual summit on research and innovation (SRI-2016)*, 15 October, 2016

Annexure-III

Papers published/Presented in National Conferences/Proceedings: 04

1. **Jignasa Solanki**, B. Sengupta, Phenol Removal with Emulsion Liquid membrane. *Proceedings of Separation in Process Industries (SPI-2003)*, Published by Institute of Technology, Banaras Hindu University, Varanasi, 2003, pp. 24-30.
2. **Jignasa Solanki**, Z.V.P. Murthy, Green Synthesis of Nanomaterials. Presented at "National Conference on Green Chemistry" 6th – 8th February, 2009, Veer Narmad South Gujarat University, Surat, Gujarat. (OP-22)
3. Preeti S. Mishra, **Jignasa N. Solanki**, and Z.V.P. Murthy, Effects of Nanofillers on Proton Exchange Membranes for Direct Methanol Fuel Cell, Presented at the "ChEmference' 12", a National Conference on Chemical Engineering, hosted jointly at Institute of Chemical Technology, Mumbai and Indian Institute of Technology Bombay on 10th and 11th December, 2012. (Sr.No.76)

4. **Jignasa N. Solanki**, Kishan soni, Garvit Garg, Deepak saini, Effect of nanoparticle size on band gap of copper doped zinc oxide, Presented at the “MR-13”, a National Symposium for Materials Research Scholars 2013, held at Indian Institute of Technology Bombay on 8-10 May, 2013.

Annexure-IV

Workshops/Short Term Courses/Seminars Attended:

Sr. No	Title STTP/Workshop/Conference	Date of programme		Organizing institute, Place
		From	To	
1	Carbon Neutral Energy Sources	9/05/2016	13/05/2016	SVNIT, Surat
2	Design of experiment using the Taguchi method: an Overview	25/04/2015	25/04/2015	SVNIT, Surat
3	FEM Simulations using COMSOL Multiphysics and Neural Network based Modelling using STATISTICA	7/08/2014	7/08/2014	SVNIT, Surat
4	COMSOL multiphysics modeling	6/12/2014	6/12/2014	SVNIT, Surat
5	Mathematical Statistics for Researchers, Engineers and Scientists	2/09/2013	6/09/2013	SVNIT, Surat
6	Advances on Wastewater Treatment and Energy Generation	30/09/2013	4/10/2013	SVNIT, Surat
7	Green Chemistry and Engineering: Towards a Sustainable Future	8/11/2013	22/11/2013	SVNIT, Surat
8	Developing Teachers for Effective Teaching and Research	3/06/2013	7/06/2013	SVNIT, Surat
9	Treatment and disposal of wastewaters	5/10/2009	9/10/2009	SVNIT, Surat
10	Nanotechnology and Applications	13/07/2009	17/07/2009	SVNIT, Surat
11	Nanotechnology: A Sustainable Alternative to Environment	19/01/2009	23/01/2009	SVNIT, Surat
12	CFD analysis in Chemical Engineering	7/07/2008	11/07/2008	IIT, Mumbai
13	Teaching Pedagogy	12/05/2008	15/05/2008	SVNIT, Surat
14	Research methodology	16/05/2008	17/05/2008	SVNIT, Surat
15	Nanostructured Materials: Research and Development Status	18/02/2008	22/02/2008	IIT, Roorkee
16	Induction training course for teachers	21/01/2008	23/01/2008	SVNIT, Surat
17	Recent Trends in Corrosion Science, Technology, Monitoring and Control	25/12/2007	29/12/2007	SVNIT, Surat
18	Nanoscience and Nanotechnology	16/04/2007	20/04/2007	NITTR, Chandigarh
19	Matlab and its uses in Control	20/02/2006	25/02/2006	DDIT, Nadiad
20	50 years of DNA Double Helix Retrospect and Prospects	11/10/2004	11/10/2004	M.V. College, Rajkot, Gujarat
21	Recent trends in Chemical Engineering	11/07/2016	15/07/2016	SVNIT, Surat.
22	Solar photovoltaic energy: contemporary technologies and recent advances	08/10/2016	12/10/2016	SVNIT, Surat.