

## BIO-DATA

**Name:** Dr. (Mrs.) Jignasa V. Gohel  
**Date of Birth:** 14-06-1979  
**Address:** Professor  
Department of Chemical Engineering  
S. V. National Institute of Technology, Surat  
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Institute webpage: [www.svnit.ac.in/](http://www.svnit.ac.in/)  
<https://svnit.ac.in/facup/jvg.pdf>



**Teaching and Research Experience:** U.G. and P.G. Teaching: **22.5 years.**

Institute	Current Designation	Duration
S. V. National Institute of Technology, Surat, Gujarat	Associate Professor	5.5 years
S. V. National Institute of Technology, Surat, Gujarat	Assistant Professor	12 years
Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, India	Lecturer	2 years
Nirma institute of Technology, Ahmedabad, Gujarat	Lecturer	6 months
V.V.P. Engineering. College, Rajkot, Gujarat	Lecturer	2.5 Years

**Research Fields of Interest:** Green Energy, Materials Science, Nanotechnology, Solar Cells, Energy Storage

**Ph.D. Students Guided:** 3 completed, 5 ongoing

**There are two PhD positions available with fellowship of Rs. 37,000/- plus HRA per month in our research group.** Essential Qualifications: Master Degree in Chemical Engineering/Electrical Engg/Electronics Engg./M Sc or Equivalent. Interested candidates/Students may contact [sjn@ched.svnit.ac.in](mailto:sjn@ched.svnit.ac.in) with a brief CV.

**M.Tech Dissertations Guided:** 10 completed, 3 ongoing

**Research Projects:** 04 Completed

**Publications: (Total No = 93)**

Full Papers Published /Accepted for Publication in SCI/SCIE Journals: **46**

Process Patents Published and Granted: **5**

Full Papers Published as Chapters in International Books: **6**

Full Papers Published in Miscellaneous International Journals: **2**

Full Papers Presented & Published in International Conferences Proceedings: **30**

Full Papers Presented & Published in National Conferences Proceedings: **4**

(for details of published full papers please see **Appendix-I**)

**Awards won/Recognition:**

1. **Won National Award for Best Research** and Ph.D. Thesis awarded by the prestigious IChE (Indian Institute of Chemical Engineers) in Chemical Engineering/Technology for the research work on "Synthesis and applications of nanoparticles" in 2014

2. **Early Carrier Research Award** was sanctioned by SERB, Government of India, New Delhi, for Research work on Synthesis and characterization of semiconductor/oxide materials for cost effective perovskite solar cell modules in July, 2017.
3. **Best Paper Awarded at International conference** on “The 8th International Conference on Circuits, Systems and Simulation” at Industrial University of Ho Chi Minh City, Vietnam, May 16-18, 2025, Paper Title: Computational Modeling for Integration of Energy Storage Device with Next Generation
4. **AIChE outstanding Student Chapter Award 2024** is awarded as Chairperson of Chemical Engineering Society – AIChE student chapter.
5. **Best Paper Awarded at International conference** on “Nanotechnology Applications: Chemical, Energy and Environment” **2017**, Paper Title: TiO<sub>2</sub> nanoparticles prepared by mechanical reduction technique for superior DMFC nanocomposite PVA membranes”
6. Nominated as Member of **Board of Studies** of Marwadi University, Rajkot in the department of Chemical Engineering.
7. **AIChE outstanding Student Chapter Award 2025** is awarded as Chairperson of Chemical Engineering Society – AIChE student chapter.

**Citations Records: Citations:** 1861 (Source: Google Scholar Citations: as on 15-01-2026)

**h-index (Hirsch index): 25, i10- index: 37**

**Process Patents: 06**

- (1) Title: “Perovskite Solar Cell with Poly(3-hexylthiophene) based Gradient Heterojunction Layer and Method of its Fabrication”, **Granted** on 21/03/2022 with **Patent No.392369**
- (2) Title: “Process for synthesis of copper zinc tin sulfide CZTS material as hole transport material” **Granted** on 20/05/2022 with **Patent No.397301**.
- (3) Title: “Mixed Cationic Perovskite Solar Cell with UiO66 as Passivating Material and method of its Fabrication”, Patent published, Application No. **202321023299**, **Granted** on 21/12/2023 with **Patent no. 486607**
- (4) Title: “An inorganically passivated perovskite layer, a perovskite solar cell comprising the same, and a method of preparation thereof”, Application No.: 202321076051, **Granted** on 27/09/2024, with **Patent no. 551334**
- (5) Title: “Stable Hybrid Passivated Perovskite Solar Cells (PSC) And A Process for Fabrication of Same, Published September, 2024, **Granted** on 28/03/2025, **Grant No 564329**, in 2025 (Application No.: 202421064104, Dated 24/08/2024)
- (6) Title: “Super-efficient low cost next generation Solar Cells (PSC) And A Process for Fabrication of Same, Under Process

**Reviewers: 67**

Reviewed/reviewing technical papers for **65** International/National Journals (which includes 15 SCI/SCIE Journals) in the fields of Chemical Engineering, Energy, and thin films, and solar cells

**Ph.D. Thesis Examiner: 09** Till date Examined 08 Ph.D. thesis of CSIR/Universities. Ph.D. thesis examined for CSIR (NCL, Pune) in 2021; Examined 01 Ph.D. thesis of SRM University (SRM Institute of Science and Technology), as Ph.D. thesis examined in May 2023. Examined 02 Ph.D. thesis of Osmania University, Hyderabad, as examiner (1 thesis in April 2024, and 1 thesis in February 2025), Examined 01 Ph.D. thesis of Gujarat Technological University (GTU) in 2019

**Expert Lectures delivered: 32**

**Workshops/Summer Schools/WINTER Schools/Short term Courses /Training Programme organized: 6**

**Workshops/Summer Schools/WINTER Schools/Short term Courses attended: 23 (Appendix-III)**

**Research Projects: 04 completed**

- (1) DST-SERB, (Rs. 16,32,000/-) from Government of India, New Delhi, for “Synthesis and characterization of semiconductor/oxide materials for cost effective perovskite solar cell modules” from 2017
- (2) MHRD Funded, 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).
- (3) TEQIP project grant of the Institute for UG student “Synthesis, characterization and optimization of Nanostructured photoelectrochemical material for water splitting” Rs. 50,000/-(2013-2014).
- (4) Research project grant of the Institute (TEQIP sponsored) for UG student for “Flow meter using linear variable differential transformer (LVDT)” Rs. 50,000/- (2013-2014).

### Ph.D. Students Guided

Sr. No.	Student Name (Adm. No.)	Title of Thesis	Ph. D. Awarded in Year
1.	Nitukumari Zha (DS14CH007)	Preparation and optimization of perovskite thin film solar Cells	Ph. D. Awarded in January, 2019
2.	Siddhdhant Patel (DS15CH001)	Synthesis and Optimization of CZTS Thin Films for Applications in Third Generation Solar Cells	Ph. D. Awarded in March, 2020
3.	SaiKumar Nair (DS17CH001)	Investigation on stability, efficiency and degradation studies of perovskite solar Cells	Ph. D. Awarded in February, 2022
4	Pallavi S. Gharat (D25CH003)	A study on synthesis and characterization of Next Generation Solar Cells	Ongoing
5	Swaraj Kumar (D25CH003)	Ab initio study of Next Generation Solar Cells and SCAPS simulation	Ongoing
6	Mruga Raval (D25CH003)	Sustainable Developments of Contemporary Solar Cells	Ongoing
7	Pankaj Vasava (DS25CH001)	Advanced Research in Thin-film Solar Cells	Ongoing
8	Aliva Manjari Lenka (DS25CH005)	Recent Neoteric Materials for Advanced applications	Ongoing

### M.Tech Dissertations Guided

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	2015-2016	----
6.	Gaurang D. Vaghela (P17CH013)	A study on synthesis and optimization of SnO <sub>2</sub> thin films for applications in perovskite solar cells	2018-2019	----
7.	Siba Prakash Bhoi (P18CH004)	Study on synthesis, characterization and applications of hybrid thin film solar cell	2019-2020	----
8	Subham Khare (P20CH003)	A Study on perovskite solar cell additive engineering and surface passivation	2021-2022	Dr. S. K. Sundar
9	Srish Kulkarni (P21CH005)	Contemporary Energy Materials for Efficient Energy Conversion	2022-2023	Dr. Smita Gupta
10	Nishant Rana (P22CH005)	Advanced Energy Materials for superior performance of Next Generation Solar Cells	2023-2024	----
11	Harsh Maurya (P24CH010)	A Systematic Study on Innovations in Third generation Solar Cells, and Flexible Fibre-based Solar Cells	2024-2025	Dr. V.K. Rathore
12	Dhruvik Surani (240280772005)	Strategic Design and Structural Studies of Metal Organic Frameworks for Perovskite Solar Cells Applications	2024-2025	
13	Jigish Chopda	Novel approach for energy conversion	2025-2026	Dr. V.K. Rathore

### **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.

**Memberships in professional bodies:** Life Member of IChE, Indian Institute of Chemical Engineers, LM-53987 American Institute of Chemical Engineers, AIChE Member, Member ID: 009905899762, March, 2024 onwards

**Testing/Consultancy:** Testing of nanoparticles size, analysis of various compounds and solutions, such as, paint, Lipoid, dye and pharmaceutical compounds for and chemical structure. of various companies/Individual

### **Contribution/Nomination as External Examiner/Expert:**

1. Contribution in Ph.D. Thesis and synopsis Evaluation for GTU on 1/4/2019
2. Invitation as an expert for the Research Week on 21st (Sat) and 23rd (Mon) Dec. 2019 at GTU, Chandkheda

### **Summer research Project Guided (B. Tech) : Total No. 04**

- (1) Summer Research project grant of the Institute (Rs. 10,000/-) for UG student, (Deepti Banduke, U16CH011) "Preparation of SnO<sub>2</sub> thin film using sol-gel spin coating technique and study the effect of molar concentration, aging time and annealing temperature parameters on efficiency of solar cell" May-July (2018)
- (2) Summer Research Grant project grant of the Institute (Rs. 10,000/-) for UG student, (Hrdik Chandra, U15CH032) "Effect of type of annealing environment and temperature on the efficiency of CZTS thin film solar cell" May-July (2017)
- (3) Summer Research project grant of the Institute (Rs. 10,000/-) for UG student, (Sridhar Behera) "Integration of Energy Storage Device with Next Generation Solar cells: Nanomaterials and Applications-" May-July (2024)
- (4) Summer Research Grant project grant of the Institute (Rs. 10,000/-) for UG student, (Amar Kumar Pradhan "Nanomaterials and Applications" May-July (2024)

### **Expert Lectures delivered: 32 (Appendix –II)**

### **International/National Conference Organized:**

**1.**International Conference on Sustainable Technologies in Energy and Environmental Management (Hybrid-Mode) (STEEM – 2025), at Department of Chemical Engineering, SVNIT, Surat, during June 06 – 07, 2025

**2.**National Conclave on "Industry Sustainability – Energy Perspective" A Mission to VIKSIT BHARAT @ 2047 On 6th July 2024 At Hyatt Place, Bharuch in collaboration with Indian Institute of Chemical Engineers, Ankleshwar (IICHE-ARC).

### **Training Programmes Organized: 07**

1. Organized as a Coordinator, the Intellectual Property Awareness program in collaboration with Government of India, Intellectual Property Office, India, 2022 at S.V. National Institute of Technology, Surat, Gujarat, India, on 21 January, **2022** (Coordinators: Dr. Jignasa V. Gohel), Number of Registered Participant/Beneficiary: 145
2. Organized as a Coordinator, TEQIP-III Sponsored One-Week Short-Term Training Program on "Research Trends in Energy and Environment", Department of Chemical Engineering, S.V. National Institute of Technology, Surat, Gujarat, India, during 6th -10th January, **2020** (Coordinators: Dr. Jignasa V. Gohel, Dr. Vineet Rathore, Dr. S. Sundar), Number of Registered Participant/Beneficiary: 25
3. Organized as a Coordinator, TEQIP-III Sponsored One-Week Short-Term Training Program on "Research Methodology, Innovation and Academic Administration in Engineering", Department of Chemical Engineering, S.V. National Institute of Technology, Surat, Gujarat, India, during 1st – 5th July, **2019** (Coordinators: Dr. Jignasa V. Gohel, Dr. Chetan M. Patel, Dr.Mausumi Mukhopadhyay)
4. Organized as a Coordinator, TEQIP-III Sponsored One Day Workshop on "Industry Institute Interaction for Higher Education and Entrepreneurship", Department of Chemical Engineering, S.V. National Institute of Technology, Surat, Gujarat, India, on 16th March **2019** (Coordinators: Dr. Jignasa V. Gohel, Dr. M. A. Desai, Dr. Chetan M. Patel, Dr. Mausumi Mukhopadhyay)
5. Organized as a Coordinator a TEQIP-III Sponsored One Day Workshop on Curriculum and Syllabus Revision for B. Tech and M.Tech Programme" (Workshop) at Department of Chemical Engineering, S.V. National Institute

of Technology, Surat, Gujarat, India, on 02 January, 2019 (Coordinators: Dr. Jignasa V. Gohel, Dr. Chetan M. Patel, Dr. Meghal A. Desai, Dr. Mausumi Mukhopadhyay)

6. 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 14<sup>th</sup> – 18<sup>th</sup> October 2013 (Coordinators: Dr. Jignasa V. N. Solanki and Dr. Z.V.P. Murthy)

7. Organized a two-day workshop on “MATLAB for Process Engineers” as a Member of organizing committee sponsored by ISTE from 16<sup>th</sup> to 18<sup>th</sup> July, 2004 at V.V. P. Engineering College, Rajkot, Gujarat, India.

### **Various Academic and Administrative Responsibilities/Activities**

1. Associate Dean (Research and Consultancy) of SVNIT, Surat
2. Dr. Jignasa Gohel as Chairperson of Chemical Engineering Society – AIChE.
3. Chief Warden, Mother Teresa Bhavan for 4 years
4. Co-Chairman of Kashish
5. Co-Chairman of ABHINANDAN (Freshers welcome)
6. Chairman of Council of student secretaries for Council of Cultural Secretary
7. Faculty Advisor of B. Tech IV year for 15 years
8. Faculty Advisor of B. Tech IV year for 15 years
9. Chairman of the Committee for Stock verification
10. Coordinator for student council election
11. Committee for Institute Fee Structure Revision
12. Institute Canteen Tender Committee
13. Member of Convocation discipline committee
14. Departmental TEQIP-II Coordinator
15. Lab-in charge, Instrumentation and Process Control Lab since, 2007 till date
16. In-charge of B.Tech-II year (Chemical) Class Registration
17. Member of stock-verification committee
18. Member of Institute cultural festival - Sparsh Committee
19. Member of anti-ragging committee
20. Member of the Dasvidaniya Discipline and hospitality committee
21. Appointed Member of Departmental committee for Accreditation 2008.
22. Member of the Tablet Distribution committee
23. Department Instrumentation and Process Control Lab in charge
24. Member of Scrutiny Committee for student elections at institute level
25. Member of Institute student counseling Committee
26. Member of the Discussion Committee of Syllabus revision workshop for UG and PG program.
27. Served as Factotum in the final examination, invigilator in different national level exams
28. Worked as Asst. Presiding Officer in State Assembly Election & Corporation Election.
29. Worked as Asst. Presiding Officer in National Assembly Election & Corporation Election

### **Diploma/Degree Courses offered to Reliance:**

1. Degree course offered to Reliance Potential employees and taught subject IPC, January to March 2020
2. Degree course offered to Reliance Potential employees and taught subject IPC, in 2008

### **Courses developed under NBA: Total No. 03**

1. Nanomaterials Synthesis by Chemical Methods
2. Multicomponent Distillation Design
3. Introduction to Nanotechnology

### **List of Students of MMMUT for Summer Research Internship at SVNIT, Surat (2019)**

Sr. No.	Roll NO.	Name of Student	CGPA	Research Topic	MMMUT Mentor
1	2017061015	Ankur singh Yadav	7.53	Solar cell	Dr. V. L. Gole
2	2017061004	Abhishek Prajapati	6.52	Simulation of solar cell	Dr. V. L. Gole

**Workshops/Short Term Courses/Seminars Attended: See Appendix-III**

## Appendix-I

### Papers Published in International Journals (SCI/SCIE; Science Citation Index Expanded): 46

- 1) N Rana, M Selvaraj, Jignasa V Gohel, Unlocking solar potential: Taguchi-optimized idiosyncratic passivation for carbon-based perovskite solar cells, *Journal of Electroanalytical Chemistry* 994 (2025) 119240 (Elsevier Scientific Publication, The Netherlands)  
(Impact Factor: 4.28/2025)
- 2) SUR Beig, Ankita, SL Sharma, L Jajpura, M. Bajya, M Selvaraj, J V Gohel, S Ahmed, Remediation of hexavalent chromium by carboxymethyl cellulose@ nylon-6 and chitin@ nylon-6 nanofibers; chitosan-coated nylon-6 fabric for imparting electro conductivity and UV, *International Journal of Biological Macromolecules* 315 (2025) 144457  
(Impact Factor: 8.5/2025)
- 3) Mangesh K. Lanjewar, Jignasa V. Gohel, Enhanced performance of DSSCs using Ag-doped ZnO thin films Synthesized by successive ionic layer adsorption and reaction Method, *JCTM*, Accepted Manuscript  
(Impact Factor: 1/2025)
- 4) Nishant Rana, **Jignasa V. Gohel**, "Synergistic effects of MOF 545 and inorganic additives synchronously for enhanced performance of low-cost carbon-based perovskite solar cells, *Optical Materials*, *Optical Materials* 155 (2024) 115919  
(Impact Factor: 3.8/2024)
- 5) Nishant Rana, **Jignasa V. Gohel**, "Metal-organic frameworks for enhanced performance and stability in perovskite solar cells: a review." *Optical and Quantum Electronics* 56.8 (2024): 1-28.  
(Impact Factor: 3.3/2024)
- 6) Srish Kulkarni, **Jignasa V. Gohel** Enhanced performance of perovskite solar cell by optimization of thin film control parameters using Taguchi method, *Optik: International Journal for Light and Electron Optics*, (2024) 1-11 (Elsevier Scientific Publication, The Netherlands)  
(Impact Factor: 3.81/2024)
- 7) Srish Kulkarni, Smita Gupta, **Jignasa V. Gohel**, Contemporary neoteric energy materials to enhance efficiency and stability of perovskite solar cells: a review, *Journal of Solid State Electrochemistry*, Springer Publications, Germany (2024) 1-26  
(Impact Factor: 2.6/2023)
- 8) Nishant Rana, **Jignasa V. Gohel**, Metal-Organic Frameworks for Enhanced Performance and Stability in Perovskite Solar Cells, *Optical and Quantum Electronics*, Springer Publications, Germany (2024) 1  
(Impact Factor: 3.3/2024)
- 9) Shubham Khare, S.K. Sundar, **Jignasa V. Gohel**, Advanced materials to overcome the challenges in the fabrication of stable and efficient perovskite solar cells by additive engineering: a review, *Journal of Material Science*, Volume 58 (2023) 16565  
(Impact Factor: 4.68/2023)
- 10) Srish Kulkarni, Smita Gupta, **Jignasa V. Gohel**, Incorporation of MOF UiO-66-NH<sub>2</sub> and polyaniline for enhanced performance of low-cost carbon-based perovskite solar cells, *Optical Materials* (Accepted Manuscript), 2023  
(Impact Factor: 3.754/2023)
- 11) Shubham Khare, **Jignasa V. Gohel**, "Performance enhancement of cost-effective mixed cationic perovskite solar cell with MgCl<sub>2</sub> and n-BAI as surface passivating agents", *Optical Materials*, 132, 112845 (2022) (Elsevier Scientific Publication, The Netherlands)  
(Impact Factor: 3.5/2022)
- 12) Saikumar Nair, **Jignasa V. Gohel**, "Introduction of P3HT-based gradient heterojunction layer to improve optoelectronic performance of low-cost carbon-based perovskite solar cell", *Optical Materials*, Volume 119, September, 111366 (2021) (Elsevier Scientific Publication, The Netherlands)

- (Impact Factor: 3.754/2021)**
- 13) Saikumar Nair, **Jignasa V. Gohel**, “Impact of stress testing and passivation strategies on low-cost carbon-based perovskite solar cell under ambient conditions” *Optical Materials*, **117**, July, **111214** (2021) (Elsevier Scientific Publication, The Netherlands)
- (Impact Factor: 3.754/2021)**
- 14) Saikumar Nair, **Jignasa V. Gohel**, “A study on optoelectronic performance of perovskite solar cell under different stress testing conditions” *Optical Materials*, Elsevier Publication, 109 (2020) 110377, **(2020)**
- (Impact Factor: 3.06/2020)**
- 15) Saikumar Nair, Siddhant Patel and **Jignasa V. Gohel**, “Recent trends in efficiency-stability improvement in perovskite solar cells”, *Materials Today Energy*, Elsevier Publication, **17** (2020) 100449
- (Impact Factor: 7.31/2020)**
- 16) Saikumar Nair, Siddhant Patel and **Jignasa V. Gohel**, “Performance of low-cost mixed cationic carbon-based solar cells prepared through compositional engineering under ambient conditions”, *Journal of Photochemistry and Photobiology A: Chemistry*, Elsevier Publication, 392 (2020) 112437
- (Impact Factor: 3.06/2020)**
- 17) **Jignasa N. Solanki**, Preeti S. Mishra, Z.V.P. Murthy, TiO<sub>2</sub> nanoparticles prepared by mechanical reduction technique for superior DMFC nanocomposite PVA membranes, *Separation Science and Technology*, 54 (2), **(2019)** 233-246
- (Impact Factor: 1.718/2019)**
- 18) Siddhant B. Patel, **Jignasa V. Gohel**, Synthesis of novel counter electrode by combination of mesoporous–macroporous CZTS films for enhanced performance of quantum-dots sensitized solar cells, *Journal of Materials Science: Materials in Electronics*, 29 (21), **(2018)** 18151-1815
- (Impact Factor: 2.195/2018)**
- 19) Siddhant B. Patel, Amar H. Patel, **Jignasa V. Gohel**, A novel and cost effective CZTS hole transport material applied in perovskite solar cells, *CrystEngComm*, Royal Society of Chemistry England 20 (47), **(2018)** 7677-7687
- (Impact Factor: 3.304/2017)**
- 20) Nitu Kumari, Sanjaykumar R. Patel and **Jignasa V. Gohel**, Enhanced stability and efficiency of Sn containing perovskite solar cell with SnCl<sub>2</sub> and SnI<sub>2</sub> precursors, *Journal of Materials Science: Materials in Electronics*, 29 (21), **(2018)** 18144-18150 DOI:: 10.1007/s10854-018-9926-y
- (Impact Factor: 2.324/2018)**
- 21) Nitu Kumari, Sanjaykumar R. Patel and **Jignasa V. Gohel**, Superior efficiency achievement for FAPbI<sub>3</sub>-perovskite solar cell by optimization with response surface methodology technique and partial replacement of Pb by Sn, *Optik-International Journal for Light and Electrons optics*, 176 **(2019)** 262–277.
- (Impact Factor: 2.187/2019)**
- 22) Siddhant B. Patel, **Jignasa V. Gohel**, Quasi solid-state quantum dot–sensitized solar cells with polysulfide gel polymer electrolyte for superior stability, *Journal of Solid State Electrochemistry* Springer Publications, Germany, 23 **(2019)** 2657–2666
- (Impact Factor: 2.646/2019)**
- 23) **Jignasa N. Solanki**, Preeti S. Mishra and Z.V.P. Murthy, TiO<sub>2</sub> nanoparticles prepared by mechanical reduction technique for superior DMFC nanocomposite PVA membranes, *Separation Science and Technology*, 54 (2), **2018**, 233-246
- (Impact Factor: 1.718/2018)**

- 24) Siddhant B. Patel, **Jignasa V. Gohel**, Optimization of sol–gel spin-coated Cu<sub>2</sub>ZnSnS<sub>4</sub> (CZTS) thin-film control parameters by RSM method to enhance the solar cell performance, *Journal of Materials Science*, (53), 2018, 12203–12213  
(Impact Factor: 3.442/2018)
- 25) Mangesh Lanjewar, **Jignasa V. Gohel**, Highly enhanced solar conversion efficiency of novel layer-by-layer PbS:Hg and CdS quantum dots sensitized ZnO thin films prepared by sol-gel spin coating, *Bulletin of Materials Science* 41 (6), 2018, 151  
(Impact Factor: 0.899/2013)
- 26) Nitu Kumari, S. R. Patel and **Jignasa V. Gohel**, Optical and structural properties of ZnO thin films prepared by spray pyrolysis for enhanced efficiency perovskite solar cell application", *Optical and Quantum Electronics*, 50 (2018) 180-201 Springer Publications, DOI: 10.1007/s11082-018-1376-5, 50 (4), 180  
(Impact Factor: 1.055/2017)
- 27) Siddhant B. Patel, **Jignasa V. Gohel**, Enhanced solar cell performance by optimization of spray coated CZTS thin film using Taguchi and response surface method, *Journal of Materials Science: Materials in Electronics*, 29 (7), 2018, 5613-5623, DOI: <https://doi.org/10.1007/s10854-018-8530-5>  
(Impact Factor: 2.019/2016)
- 28) Nitu Kumari, **Jignasa V. Gohel**, SR Patel, Optimization of TiO<sub>2</sub>/ZnO bilayer electron transport layer to enhance efficiency of perovskite solar cell, *Materials Science in Semiconductor Processing*, Vol. 75 (2018) 149–156. (Elsevier Scientific Publication, The Netherlands)  
(Impact Factor: 2.359/2018)
- 29) Nitu Kumari, S. R. Patel and **Jignasa V. Gohel**, Current Progress and Future Prospective of Perovskite Solar Cells: A Comprehensive Review, *Reviews on Advanced Materials Science*, 53 (2018) 161-186.  
(Impact Factor: 2.50/2018)
- 30) **Jignasa V. Gohel**, A. K. Jana, Mohit Singh, Highly enhanced photocurrent of novel quantum-dot-co-sensitized PbS–Hg/CdS/Cu: ZnO thin films for photoelectrochemical applications, *Applied Physics A* (2017) 123 (8) 506  
(Impact Factor: 1.455/2015)
- 31) Nitu Kumari, **Jignasa V. Gohel**, SR Patel, Multi-response optimization of ZnO thin films using Grey-Taguchi technique and development of a model using ANN *Optik-International Journal for Light and Electron Optics* (2017) 144, 422-435  
(Impact Factor: 0.835/2017)
- 32) **Jignasa N. Solanki**, Preeti S. Mishra and ZV.P. Murthy, Enhanced performance of DMFC prepared by 10Cu/CeO<sub>2</sub> catalyst and nanocomposite SPVA membranes with layer-by-layer coating of polyacrylic acid and chitosan, *International Journal of Hydrogen Energy* 42, (2017), <http://dx.doi.org/10.1016/j.ijhydene.2017.04.008>  
(Impact Factor: 3.205/2015)
- 33) Mangesh Lanjewar, **Jignasa V. Gohel**, Enhanced Performance of Ag Doped ZnO and Pure ZnO Thin Films DSSCS Prepared by Sol Gel Spin Coating, *Inorganic and Nano-Metal Chemistry*, Volume 47, 2017 - Issue 7 Pages 1090-1096, DOI: 10.1080/24701556.2016.1241275, 2016 (Taylor & Francis Publication, USA)  
(Impact Factor: 0.493/2015)
- 34) **Jignasa N. Solanki**, Preeti S. Mishra and ZV.P. Murthy, In Situ Prepared TiO<sub>2</sub> 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: 0.76/2015)
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#### **Process Patents Published and Granted: 05**

(1) Title: “Perovskite Solar Cell with Poly(3-hexylthiophene) based Gradient Heterojunction Layer and Method of its Fabrication”, **Granted** on 21/03/2022 with **Patent No.392369**

(2) Title: “Process for synthesis of copper zinc tin sulfide CZTS material as hole transport material” **Granted** on 20/05/2022 with **Patent No.397301**.

(3) Title: “Mixed Cationic Perovskite Solar Cell with UiO66 as Passivating Material and method of its Fabrication”, Patent published, **Granted** on 21/12/2023 with **Patent no. 486607** Application No. **202321023299**

(4) Title: “An inorganically passivated perovskite layer, a perovskite solar cell comprising the same, and a method of preparation thereof, Application No.: 202321076051, **Granted** on 27/09/2024, with **Patent no. 551334**

(5) Title: “A Method of Novel neoteric next generation solar cells”, Published September, 2024, **Application No.: 202421064104**, Dated 24/08/2024

## **Full Papers Published as Chapters in International Books: 06**

1. S.B. Patel, J.V. Gohel, Recent Developments in  $\text{Cu}_2\text{ZnSnS}_4$  (CZTS) Preparation, Optimization and its Application in Solar Cell Development and Photocatalytic Applications, Chapter 14, in: Rajesh J. Tayade, Vimal Gandhi, (Eds.), Photocatalytic Nanomaterials for Environmental Applications, Materials Research Forum LLC, Millersville, PA, USA, 2018 pp. 370-404 (Published as part of the book series **Materials Research Foundations** Volume 27)

2. Saikumar Nair and Jignasa V. Gohel, “A review on contemporary hole-transport layers in perovskite solar cells”, Chapter 6, in: Lalita Ledwani, Jitendra S. Sangwai, (Eds.), **Nanotechnology for Energy and Environmental Engineering**”, **Springer Publication**, 2020. pg 145-168, March 2020.

3. Nitu Kumari, Sanjaykumar R. Patel and **Jignasa V. Gohel**, Optimization of  $\text{MAPbI}_3$  film using response surface methodology for enhancement in photovoltaic performance, Chapter 17, in: Lalita Ledwani, Jitendra S. Sangwai, (Eds.), “**Nanotechnology for Energy and Environmental Engineering**”, **Springer Publication**, 2020. pg 395-412, March 2020.

4. Siddhant B. Patel, Gaurang D. Vaghela, **Jignasa V. Gohel**, (2024) “Superior power conversion efficiency of novel solar cell and Multi-response optimization of spray coated  $\text{SnO}_2$  thin films” **ELSEVIER S&T Books on Custom Power Devices for Efficient Distributed Energy System**, ISBN: 978-0-443-21491-2.

5. Siba Prakash Bhoi, **Jignasa V. Gohel**, (2024) Compositional engineering and additive engineering for enhanced performance of hybrid solar cells, Editor(s): Ahmed Al-Durra, Sabha Raj Arya, Ashutosh K. Giri, Custom Power Devices for Efficient Distributed Energy Systems, **Elsevier**, **2024**, Pages 189-224, ISBN 9780443214912, <https://doi.org/10.1016/B978-0-443-21491-2.00008-7>. (<https://www.sciencedirect.com/science/article/pii/B9780443214912000087>)

6. Nainik Bhandari, Harshad Makwana, Nishant Rana, Srish Kulkarni, and **Jignasa Gohel**, (2024) Numerical simulations using SCAPS-ID software on variation of ETL, HTL and absorbing layers of contemporary organic solar cells with neoteric DOE Approach as a soft computing tool, 709-719 (Chapter 53), in Book, Proceedings of International Conference on Computational Intelligence ICCI 2023 Edited by, R. Tiwari · M. Saraswat · M. Pavone, ISBN 978-981-97-3525-9, Springer Publication. [https://doi.org/10.1007/978-981-97-3526-6\\_53](https://doi.org/10.1007/978-981-97-3526-6_53)

## **Papers Published in Miscellaneous International Journals: 02**

1. Siddhant B. Patel and Jignasa V. Gohel, "Effect of annealing atmosphere and temperature on the properties of the sol-gel spin coated  $\text{Cu}_2\text{ZnSnS}_4$  (CZTS) thin films", *International Journal of Research*, 4 (2017) 971-974.
2. Nitu Kumari, Sanjaykumar R. Patel, Jignasa V. Gohel, "Optimization of type and concentration of dopant (Sb and Al) for ZnO thin films prepared by spray pyrolysis technique and their applications in perovskite solar cells", *International Journal of Research*, 4 (2017) 938-941.

## Full Papers Presented & Published in International Conferences Proceedings: 30

- 1) **Jignasa V. Gohel**, Amar Kumar V. Pradhan, Vineet Kumar Rathore and Sridhar Behera, Paper Title: Computational Modeling for Integration of Energy Storage Device with Next Generation at **Best Paper Awarded at International conference ICCSS 2025** (8th International Conference on Circuits, Systems and Simulation at Industrial University of Ho Chi Minh City, Vietnam, May 16-18, 2025,
- 2) Bhanderi, N., Makwana, H., Rana, N., Kulkarni, S., Gohel, J. (2024). Numerical Simulations Using SCAPS-ID Software on Variation of ETL, HTL and Absorbing Layers of Contemporary Organic Solar Cells With Neoteric DOE Approach as a Soft Computing Tool. At International Conference on Computational Intelligence. ICCI 2023, Nov. 2023
- 3) Nishant Rana, Yagnesh Trivedi, **Jignasa V. Gohel**, "Cesium based materials to enhance the performance of perovskite solar cells: a contemporary review on synthesis and superior properties." International conference on trends in energy and environmental research for sustainable development (TEERSD-2023), November 02-03, 2023.
- 4) Dr. **Jignasa V. Gohel**, Sanjeev Singh, Synthesis of  $\text{TiO}_2$  and Colloidal  $\text{SnO}_2$  QDs For Environment Friendly Next Generation Solar Cells, Ankara International Congress on Scientific Research-X, June 25-27, 2024, Ankara, TURKIYE
- 5) **Dr. Jignasa V. Gohel**, Siba Prakash Bhoi, Srish Kulkarni, Robust strategies for sustainable ab initio perovskite photovoltaics and role of engineering aspects, Proceedings of International Symposium & 75th Annual Session of IChE (CHEMCON-2022), Kanpur, December 27-30, 2022.
- 6) Srish P Kulkarni, Shubham Khare, **Dr. Jignasa V Gohel**, Experimental Developments to overcome Recent challenges in the fabrication of commercial, stable and highly efficient perovskite solar cell modules, Online International Conference on  $\text{H}_2$  AND  $\text{CO}_2$  (S & T Digital), IISER Pune, 17-19 November, 2022
- 7) Palak Vanja, Yagnesh Trivedi, Shubham Khare, **Jignasa V. Gohel**, Passivation of electron transport layer, perovskite layer and the top electrode layer for the perovskite solar cell: A Contemporary Review, 6th International Congress on Innovative Scientific Approaches, Samsun, Turkey Dec 19-20, 2021
- 8) Saikumar Nair, Siba Prakash Bhoi, Yagnesh Trivedi and **Jignasa V. Gohel**, "Optimization of mixed cationic perovskite solar cell through response surface methodology (RSM)", International Conference on Electrochemistry EIHE-2020, BARC (Bhabha Atomic Research Centre), Mumbai, January 21-25, 2020.
- 9) **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.
- 10) **Jignasa N. Solanki**, "Novel biogas plant design for the rural development", *Proceedings of International Symposium on Renewable Energy Asia and 4<sup>th</sup> SEE Forum Meeting (REA 2008)*, Indian Institute of Technology, Delhi, December 11-13, 2008.

- 11) **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.
- 12) **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.
- 13) **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.
- 14) **Jignasa N. Solanki**, "Alternative Sweeteners- A Rising Demand", *Proceedings of International Symposium & 56th Annual Session of IChE (CHEMCON-2003)*, Bhubneshwar, December 19-22, 2003.
- 15) **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.
- 16) **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.
- 17) **Jignasa N. Solanki**, "Application of Molecular Sieves", *International Conference of Chemical Engineering, COLLISION 2000*, September 24-26, 2000, Nadiad, Gujarat, India.
- 18) **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.
- 19) **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)
- 20) 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.
- 21) 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
- 22) 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.
- 23) 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
- 24) Siddhant Patel and **Jignasa V. Gohel**, Synthesis and characterization of Copper Zinc Tin Sulfide films prepared by spray pyrolysis deposition, Paper presented at International Conference on Sustainable Development for Energy and Environment, (ICSDEE-2017)", held at National Chemical Laboratory, Pune, India, January 16-17, 2017 (Paper No. EN-102) ISBN No. 978-93-24457-19-0
- 25) Nitu Kumari, Sanjaykumar R. Patel, **Jignasa V. Gohel**, Effect of Annealing Temperature on the structural, morphological and optical properties of zinc oxide thin films prepared by spin coating Technique, Paper presented at International Conference on Sustainable Development for Energy and Environment, (ICSDEE-2017)", held at National Chemical Laboratory, Pune, India, January 16-17, 2017 (Paper No. EN-102) ISBN No. 978-93-24457-19-0

- 26) Siddhant B. Patel and **Jignasa V. Gohel**, “Influence of thin film quality control parameters on the properties of spray coated Tin monosulfide thin films for photovoltaic application” –Dubai (UAE) from Proceedings of the “International Conference on Agricultural, Chemical, Biological and Environmental Science (ACBES 2017), Dignified Researchers Publication (DiRPUB), Dubai, October 17-19, 2017, pp.181-186.
- 27) Siddhant B. Patel and **Jignasa V. Gohel**, “Effect of annealing atmosphere and temperature on the properties of the sol-gel spin coated Cu<sub>2</sub>ZnSnS<sub>4</sub> (CZTS) thin films”, Paper presented at the National conference on Recent Advanced and Future Trends in Chemical Technology, at Nirma University, Ahmedabad (India), 16 September 2017.
- 28) Nitu Kumari, Sanjaykumar R. Patel, **Jignasa V. Gohel**, “Optimization of type and concentration of dopant (Sb and Al) for ZnO thin films prepared by spray pyrolysis technique and their applications in perovskite solar cells”, Paper presented at the National conference on Recent Advanced and Future Trends in Chemical Technology, at Nirma University, Ahmedabad (India), 16 September 2017.
- 29) **Jignasa V. Gohel**, Preeti S. Mishra and Z.V.P. Murthy TiO<sub>2</sub> nanoparticles prepared by mechanical reduction technique for superior DMFC nanocomposite PVA membranes, International conference, NACEE-2017, at SVNIT, Surat on 23/03/2017.
- 30) Nitu Kumari, Sanjaykumar R. Patel and **Jignasa V. Gohel**, Titanium oxide thin film preparation, Characterization and application in dye sensitized solar cells, Symposium on Sustainability of Chemical Industries: Exploring New Avenues for Growth: 2017 organized by GCET, Aanad from 22-23 August 2017.

## **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.

### ***Appendix –II***

**Keynote speeches:** International Conference "CHEM-TECHNOVA 2025

Expert Lectures organized at SVNIT, Surat as a resource Person (other than STTP):

- 1) The Expert Talk, organized on 22nd February 2025, was given by Mr. Gautam Chakraborty, Global Business Head, Plant Engineering Business Unit, L&T Technology Services.

**Expert Lectures delivered:** 32

- 1) Invited talk on “**Advances in Materials for Sustainable Development**” at DoME, SVNIT Surat in Short Term Course (AMPD-2025) during April 28 – May 02, 2025, on 29/04/2025

- 2) Invited talk on **“Greening the Future: Innovations in Solar Cell Technology for Enhanced Performance and Sustainability”** at HBTI Kanpur, in International Conference "CHEM-TECHNOVA 2025 on 04/04/2505.
- 3) Invited talk on **“Nanomaterials for Solar Cell Innovations: Enhancing Efficiency and Sustainability”** at NIT Hamirpur, in Short Term Course (ANEEA-2025) on 05/03/2025
- 4) Invited talk on **“Advances in Energy Harvesting”** at NIT Surat, in MSME-sponsored Advanced Entrepreneurship and Skill Development Program (A-ESDP) on 19/02/2025.
- 5) Invited talk on **“Novel Material in Sustainable Development”** at MMTTU, UGC Sponsored inter university institute on 07/01/2025
- 6) Invited talk on **“Solar Energy Sector of Developing Bharat”** at MMTTU, UGC Sponsored inter university institute on 07/01/2025
- 7) Invited talk on **“Organic Photovoltaic Devices”**, Expert lecture at NIT Silchar, Assam, 31-1-2024
- 8) Invited talk on **“Green Energy for Sustainable Development”**, Expert lecture at SRM University, Chennai, 22-9-2023
- 9) **“Optimization using Taguchi, Response Surface Methodology and ANN: Helpful tools for biological systems”** Expert lecture at STTP on **“Computational Methods for Analyzing, Modeling and Predicting the behavior of exploitative or applicatory biological systems”**, 22nd-29th December 2021, V.V.P. Engineering College, Rajkot, Gujarat, India
- 10) **“Nanoscience and Nanotechnology for sustainable development”**, Expert lecture at STTP on Nano-Technology: Material, Synthesis, Characterisation and Application, 6th-10th September 2021, S. N. Patel Institute of Technology and Research Centre, Umrah, Surat
- 11) **“Novel Nanomaterials, Characterization and uses for Energy Sector”**, Expert lecture at STTP on Nano-Technology: Material, Synthesis, Characterization and Application, 6th-10th September 2021, S. N. Patel Institute of Technology and Research Centre, Umrah, Surat
- 12) **“Solar cells: Process Intensification for Sustainable Energy Conversion”** Expert lecture at Gharda Institute of Technology, Lavel, Khed, Maharashtra on 5/4/2021.
- 13) **“Novel Materials and their applications for preparation of energy efficient contemporary solar cells”**, on 9 April, 2021 at 5 Day STTP (GTSD-21), ChED, GEC-Bharuch.
- 14) **“Synthesis and characterization of semiconductor/oxide materials for cost effective perovskite solar cell modules”** at Workshop (GMW), at IIT Bhubaneswar, on 27 January 2020.
- 15) **“Hybrid Solar cells- Synthesis and Applications”** at Workshop at Kongu Engineering College, Perundurai, Erode, Tamilnadu, AICTE Sponsored STTP, Phase – III on 9 December, 2020
- 16) **“Synthesis Strategies for Improving the energy efficiency in solar cells”** at Workshop at Kongu Engineering College, Perundurai, Erode, Tamilnadu, AICTE Sponsored STTP, Phase – II 3 December, 2020
- 17) **“Smart Materials and Hybrid Solar cells”** at Workshop at Kongu Engineering College, Perundurai, Erode, Tamilnadu, AICTE Sponsored STTP, Phase – I (23/11/2020 to 28/11/2020) on 25/11/2020
- 18) **“Nanotechnology and Nanowaste”** on 17th January, 2020 at One-day National Seminar on ‘Nanowaste: Sources, Classification and Management’ sponsored by The Institution of Engineers, India at Uka Tarsadia University (UTU), Chemical Engineering Department, Chhotubhai Gopalbhai Patel Institute of Technology (CGPIT), Bardoli.
- 19) **“Thin film Solar cell: Preparation and applications in sensitized solar cell”** at STTP on **“Solar photovoltaic energy: contemporary technologies and recent advances”** on 8<sup>th</sup> October 2016 at Physics Dept., SVNIT, Surat.
- 20) **“Hybrid solar cell”** at STTP on **“Solar photovoltaic energy: contemporary technologies and recent advances”** on 8<sup>th</sup> October 2016 at Physics Dept., SVNIT, Surat.
- 21) **“Nanomaterials synthesis and Applications”** at International Conference, Chemcon-14, Chandigarh, Punjab, India, on 28 December, 2014.
- 22) **“Synthesis and characterization of TiO<sub>2</sub> nanoparticles and doped nanoparticles for applications in photocatalytic degradation of toxic compounds”** on 23-6-2014 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.

- 23) **“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
- 24) **“Recent Advances in Degradation of chemicals using Nanotechnology”** on 23-6-14 at one-week Short-Term Training Program RASPCENT-2014 (Recent Advances in Separation processes in Chemical Engineering and Nanotechnology-2014) at V.V.P. Engineering College, Rajkot, India.
- 25) **“Recent Trends in Chemical Engineering and Nanotechnology”** on 23-6-14 at one-week Short-Term Training Program RASPCENT-2014 (Recent Advances in Separation processes in Chemical Engineering and Nanotechnology-2014) at V.V.P. Engineering College, Rajkot, India.
- 26) **“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 14<sup>th</sup> – 18<sup>th</sup> October 2013.
- 27) **“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.
- 28) **“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.
- 29) **“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
- 30) **“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.
- 31) **“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.
- 32) **“Nanofluids and its applications”** on 21 January, 2010 at a short term course on Nanomaterials organized at SVNIT, Surat, India

### **Paper reviewed in International Journals**

1. NanoEnergy (Elsevier Scientific Publication) (SCIE Journal)
2. Advanced Powder Technology (Elsevier Scientific Publication) (SCIE Journal)
2. Surface and Coating Technology (Elsevier Scientific Publication) (SCIE Journal)
3. Journal of Physics and Chemistry of Solids (Elsevier Scientific Publication) (SCIE Journal)
4. Advances in Polymer Technology, A Journal from the Polymer Processing Institute and John Wiley & Sons, Inc.
5. Surface Innovations (ICE Publishing)
6. American Journal of Environmental Protection (Science Publishing Group, USA)
7. American Journal of Nanoscience and Nanotechnology (Science Publishing, USA)
8. National Journal of Industrial Engineering

### Appendix-III

#### 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	Particle Technology: Characterization and Modelling of Particulate Materials	01/08/2016	05/08/2016	SVNIT, Surat.
23	Green Concepts in Engineering and Chemistry	12/12/2016	16/12/2016	SVNIT, Surat.
24	Process Intensification in Chemical Industries	06/02/2017	10/02/2017	SVNIT, Surat.

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