Dr. Saurabh S. SONI

Designation: Professor

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Educational Qualifications

- M.Sc (Physical Chemistry),Sardar Patel University,1999
- Doctor of Philosophy in Chemistry, Sardar Patel University, 1999-2003
- Post Doctoral Fellowship, Laboratoire des Physique E'tate Condense, Universite du Maine, Le Mans, France, 2005-2006

Academic Experience

- Lecturer in Chemistry atGyanyagna College of Pure Applied Sciences, Rajkot (September 2003 - July 2006)
- Assistant Professor in Physical Chemistry at Department of Chemistry, Sardar Patel University, V. V. Nagar (July 2006 – Oct. 2016)
- Professor in Chemistry at Department of Chemistry, Sardar Patel University, V. V. Nagar (Oct. 2016 – Till date)

Research Area

- Metal Ion Batteries, Dye solar cells, Polymer Gel Electrolytes, Amphiphilic block copolymers and their application

Expertise

- Electrochemistry, Physical chemistry, Physical-Organic Chemistry, and Polymer Chemistry

No. of Publication

Journal Articles	:	**76**
Patent	:	**01**
Book Chapters	:	**02**

List of Publications (Appendix)

List of Patent: (No. of Patent = 01)

1. Substituted Carbazole based Dyes for Dye Solar Cells and other Optoelectronic devices.
   Inventors : Kishan B. Faladu and ***Saurabh SONI***
   Patent file no. 2609/MUM/2013 dated 7th August 2013 (Accepted in April 2018)

List of Book Chapter : (No. of book chapters = 02)

Sr. No	Title	Author's Name	Publisher	Year of Publication
01	Quasi-Solid-State Electrolytes for Lithium-Ion Batteries (Chapter 5) (ISBN:9780367701444) (eBook ISBN9781003144816) Title of Book : Ceramic and Specialty Electrolytes for Energy Storage Devices	Hiren K. Machhi, Keval K. Sonigara, ***Saurabh S. Soni***	CRC Press, Taylor & Francis Group	March 2021
02	Aqueous Electrolytes for Lithium and Sodium Ion Batteries (Chapter 9) (ISBN:9780367701444) (eBook ISBN9781003144816) Title of Book : Ceramic and Specialty Electrolytes for Energy Storage Devices	***Saurabh S. Soni,*** Jyoti Prasad	CRC Press, Taylor & Francis Group	March 2021

List of Publications (No. of publications = 76)

a) In Journals

1. Micellar Structure of Silicone Surfactants in Water from Surface Activity, SANS and Viscosity Studies. ***Saurabh. S. Soni***, N. V. Sastry, V. K. Aswal and P. S. Goyal, *J. Phys. Chem. B* **2002**, *106*, 2606 – 2617. *(Impact Factor : **2.857**)*

2. Surface Activity, SANS and Viscosity Studies in Aqueous Solutions of Oxyethylene and Oxybutylene Di- and Triblock Copolymers. ***Saurabh S. Soni***, N. V. Sastry, A. K. Patra, J. V. Joshi and P. S. Goyal, *J. Phys. Chem. B* **2002**, *106*, 13069 – 13077. *(Impact Factor : **2.857**)*

3. Dynamic Light Scattering and Viscosity Studies on the Association Behavior of Silicone Surfactants in Aqueous Solutions. ***Saurabh. S. Soni***, N. V. Sastry, John George and H. B. Bohidar, *J. Phys. Chem. B* **2003**, *107*, 5382 – 5390. *(Impact Factor : **2.857**)*

4. Surface Active and Association Behavior of Oxybutylene – Oxyethylene and Oxyethylene –Oxybutylene – Oxyethylene Copolymers in Aqueous Solutions. ***S. S. Soni***, N. V. Sastry, John George and H. B. Bohidar *Langmuir* **2003**, *19*, 4597 – 4603. *(Impact Factor : **3.557**)*

5. Study on the Effect on Nonelectrolyte Additives on the Phase, Thermodynamics, and Structural Changes in Micelles of Silicone Surfactants in Aqueous Solutions from Surface Activity, Small Angle Neutron Scattering and Viscosity Measurements. Saurabh S. Soni, N. V. Sastry, J. V. Joshi, Ekta Seth and P. S. Goyal. Langmuir 2003, 19, 6668 – 6677. (Impact Factor : 3.557)

6. Quantitative SAXS Analysis of the P123/Water/Ethanol Ternary Phase Diagrams. S. S. Soni, G. Brotons, M. Bellour, T. Narayanan and A. Gibaud, J. Phys. Chem. B 2006, 110, 15157 – 15165. (Impact Factor : 2.857)

7. Visible – Light Photocatalysis in Titania based Mesoporous Thin Films. Saurabh. S. Soni, M. J. Henderson, J.-F. Bardeau, J. White, A. Gibaud, Advanced Materials 2008, 20, 1493-1498. (Impact Factor : 27.398)

8. Synthesis, Characterization and Curing of o-Cresol – Furfural Resins. U. Patel, S. S. Soni, H. S. Patel, Int. J. Polymeric Materials 2009, 58, 10, 509 – 516. (Impact Factor :1.982)

9. Excess molar volumes, excess isentropic compressibilities and relative permittivity deviations for the ternary mixtures of esters + glycols + organic solvents at different temperatures. N. V. Sastry, M. C. Patel, R. R. Thakor, S. S. Soni, J Mol. Liq. 2010, 157, 25 – 33. (Impact Factor : 5.065)

10. Densities, Speeds of Sound, Excess Molar Volumes, and Excess Isentropic Compressibilities at T = (298.15 and 308.15) K for Methyl Methacrylate + 1-alkanols (1-Butanol, 1-Pentanol, and 1- Heptanol) + Cyclohexande, + Benzene, + Toluene, + p-xylene and + Ethylbenzene. N. V. Sastry, S. R. Patel, S. S. Soni, J Chem. Eng. Data 2011, 56, 142 – 152. (Impact Factor : 2.323)

11. Effect of non-electrolyte additives on micellization and clouding behavior of silicone surfactant in aqueous solutions. S. S. Soni, S. H. Panjabi, N. V. Sastry, Colloid and Surf. A 2011, 377, 205 – 211. (Impact Factor : 3.990)

12. Silica gel supported –SO3H functionalised benzimidazolium based ionic liquid as a mild and effective catalyst for rapid synthesis of 1-amidoalkyl naphthols. Deepali A. Kotadia, Saurabh S. Soni, J. Molecular Catalysis A, 2012, 353-354, 44 – 49. (Impact Factor : 3.687)

13. Ionic conductivity through thermoreversible polymer gel : ordering matters Saurabh S. SONI, Kishan B. Fadadu, Alain Gibaud, Langmuir, 2012 28, 751 – 756. (Impact Factor : 3.557)

14. Aggregation behavior of pyridinium based ionic liquids in water – surface tension, 1H NMR chemical shifts, SANS and SAXS measurements. Nandhibatla V. Sastry, Nilesh M. Vaghela, Pradip M. Macwan, Saurabh S. Soni, Vinod K. Aswal, Alain Gibaud, J. Colloid and Interface Science, 2012, 371(1), 52-61. (Impact Factor : 7.489)

15. Spectral sensitization of TiO2 by new hemicyanine dyes in dye solar cell yielding enhanced photovoltage : Probing chain length effect on performance. Kishan B. Fadadu, Saurabh S. Soni, Electrochimica Acta 2013, 88, 270 – 277. (Impact Factor : 6.215)

16. Symmetrical and unsymmetrical Bronsted Acidic ionic liquids for the effective conversion of fructose to 5-hydroxymethyl furfural. Deepali A. Kotadia, Saurabh S. Soni, Catalysis Science and Technology 2013, 3, 469-474. (Impact Factor : 5.721)

17. Visible light induced cell damage of Gram positive bacteria by N-doped TiO2 mesoporous thin films. S. S. Soni, G. S. Dave, M. J. Henderson, A. Gibaud, Thin Solid Films 2013, 531, 559 – 565. (Impact Factor : 2.030)

18. Excess molar volumes, excess isentropic compressiblities, excess viscosities for Methyl acetate + ethyl acetate, + buty acetate +, isoamyl acetate +, methyl propionate + , ethyl propionate + , ethyl butyrate +, methyl methacrylate +, ethyl methacrylate +, and butyl methacrylate + cyclohexane at T = 298.15 and 303.15 K. Nandhibatla V. Sastry, Sunil R. Patel, Saurabh S. Soni, J. Mol. Liquid 2013, 183, 102-112. (Impact Factor : 5.065)

19. Ionic liquid induced sphere – to – ribbon transition in the block copolymer mediated synthesis of silver nanoparticles. Saurabh S. Soni, Rohit L. Vekariya, Vinod K. Aswal, RSC Advances 2013, 3, 8398-8406. (Impact Factor : 3.119)

20. Sulfonic acid functionalized solid acid: an alternative eco-friendly approach for transesterification of non-edible oils with high free fatty acids. Deepali A Kotadia, Saurabh S Soni, Monatsh Chem. 2013 144, 1735-1741. (Impact Factor : 1.349)

21. Time-dependent stereoselective Heck reaction using mesoporous Pd/TiO2 nanoparticles catalyst under sunlight. Saurabh S SONI, Deepali A. Kotadia, Catalysis Science and Technology 2014, 4, 510-515. (Impact Factor : 5.721)

22. Effect of self-assembly on triiodide diffusion in water based polymer gel electrolytes : An application in dye solar cell, S. S. Soni, K. B. Fadadu, R. L. Vekariya, J. Debgupta, K. D. Patel, A. Gibaud, V. K. Aswal, J. Colloid and Interface Science 2014, 425, 110-117. (Impact Factor : 7.489)

23. Nonelectrolyte-Induced micellar shape changes in aqueous solutions of silicone surfactants. S. S. Soni, R. L. Vekariya, N. V. Sastry, H. P. Soni, S. R. Patil, S. H. Panjabi, J. Dispersion Science & Technology 2014, 35(10), 1419-1426. (Impact Factor : 1.701)

24. Pd doped SiO2 nanoparticles : an efficient recyclable catalyst for Suzuki, Heck and Sonogashira reactions. Deepali A Kotadia, Urmila H. Patel, Sahaj Gandhi, Saurabh S. Soni, RSC Advances 2014, 4, 32826-32833. (Impact Factor = 3.119)
.
25. Highly Efficient One-dimensional ZnO Nanowire-based Dye sensitized Solar Cell using a Metal free, D-□-A type, Carbazole derivative with more than 5% power conversion Dipankar Barpuzary, Anindya S. Patra, Jayraj V. Vaghasiya, Bharat G. Solanki, Saurabh S. Soni, Mohammad Qureshi, ACS Applied Materials Interface Science, 2014, 6, 12629-12639. (Impact Factor : 8.758)

26. Effect of Ionic Liquids on Microstructures of Micellar Aggregates formed by PEO-PPO-PEO Block Copolymer in Aqueous Solution. Rohit L. Vekariya, Debes Ray, Vinod K. Aswal, Puthusserickal A. Hassan, Saurabh S. Soni, Colloids and Surfaces A : Physicochem. Eng. Aspects 2014, 462, 153-161. (Impact Factor : 3.990)

27. Stable mesoporous Fe/TiO2 nanoparticles : A recoverable catalyst for solvent-free synthesis of propargylamine via C-H activation. Deepali A. Kotadia, Saurabh S. Soni, Applied Catalysis A : General, 2014, 488, 231-238. (Impact Factor : 5.006)

28. A synergistic effect of microwave / ultrasound and symmetrical acidic ionic liquids on transesterification of vegetable oils with high free fatty acid. Saurabh S. Soni, Deepali A.

Kotadia, Vaibhav K. Patel, Hiren Bhatt, Biomass Conv. Bioref. 2014, 4, 301-309. (Impact Factor : 2.602)

29. Influence of N-alkylpyridinium halide based ionic liquids on Micellization of P123 in aqueous solutions : A SANS, DLS and NMR study. Rohit L. Vekariya, Vinod K. Aswal, Puthussericka l A. Hassan, Saurabh S. Soni, Langmuir, 2014, 30, 14406-14415. (Impact Factor : 3.557)

30. Enhanced photovoltaic performance of mesoporous SnO2 based solar cells utilizing 2D MgO nanosheets sensitized by a metal-free carbazole derivative. Mohammad Qureshi, Tridip Ranjan Chetia,Mohammad Shaad Ansaria, Saurabh S. Soni, J. Mater. Chem. A, 2015, 3, 4291-4300. (Impact Factor : 11.301)

31. Sulphonate anchored hemicyanine dyes for dye solar cell : A study on dipole moment and polarity. Kishan B. Fadadu, Jayraj V. Vaghasiya, Sudip Choudhury, Saurabh S. Soni, J. Renew. & Sustain. Energy, 2015, 7, 023114. (Impact Factor : 1.575)

32. Microbial Selenium Nanoparticles (SeNPs) and their Application as a Sensitive Hydrogen Peroxide Biosensor. K. S. Prasad, J. V. Vaghsiya, S. S. Soni, J. Patel, R. Patel, M. Kumari, F. Jsamani, K. Selvaraj, Appl. Biochem. Biotechnol. 2015, 177, 1386 – 1393. (Impact Factor : 2.277)

33. Photocatalytic activity of Fe doped ZnS nanoparticles and carrier mediated ferromagnetism. N. Dixit, J. V. Vaghasiya, S. S. Soni, M. Sarkar, M. Chavda, N. Agrawal, J. Environ. Chem. Eng., 2015, 3, 1691. (Impact Factor : 1.355)

34. Improved molecular architecture of D–□–A carbazole dyes: 9% PCE with a cobalt redox shuttle in dye sensitized solar cells. S. S. Soni, K. B. Fadadu, J. V. Vaghasiya, B. G. Solanki, K.K. Sonigara, A.Singh, D.Das, P.K. Iyer, J. Mater. Chem. A, 2015, 3, 21664. (Impact Factor : 11.301)

35. Evolution of rhodium (III) and iridium (III) chelates as metallonucleases. P. A. Vekariya, P. S. Karia, J. V. Vaghsiya, S. S. Soni, E. Suresh, Polyhedron 2016, 110, 73 – 84. (Impact Factor : 2.343)

36. Hybrid AgNP-TiO2 thin film based photoanode for dye sensitized solar cell. Jayraj V. Vaghasiya, Keval K. Sonigara, Kishan B. Fadadu, Saurabh S. Soni, Perspectives in Science 2016, 8, 46-49. (Impact Factor : N.A.)

37. ZnO/CdS bi-layer nanostructures photoanode for dye sensitized solar cells. Paresh V. Dalal, Milind P. Deshpande, Bharat G. Solanki, Saurabh S. Soni, AIP Conference Proceedings 2016, 1728, 020223-1-4. (Impact Factor : N.A.)

38. Humic Acid as a Sensitizer in Highly Stable Dye Sensitized Solar Cells : Energy from an Abundant Natural Polymer Soil Component. Rohit L. Vekariya, Keval K. Sonigara, Kishan B. Fadadu, Jayraj V. Vaghasiya, Saurabh S. Soni, ACS Omega, 2016, 1, 14-18. (Impact Factor : 2.870)

39. Ni doped ZnS nanoparticles as Photocatalyst : Can mixed phase be optimized for better performance ? Ekta Shah, Jayraj V. Vaghasiya, Saurabh S. Soni, C. J. Panchal, Priya S. Suryavandhi, Mukesh Chavda, Hemant P. Soni, J. Environ. Chem. Eng. 2016, 4, 4708-4718. (Impact Factor : 4.30)

40. Design, synthesis and DSSC performance of o-fluorine substituted phenylene spacer sensitizers : Effect of TiO2 thickness variation. T. Bhim Raju, J. V. Vaghasiya, A. Afroz, S. S. Soni, P. K. Iyer, Phys. Chem. Chem. Phys. 2016, 18, 28485- 28491. (Impact Factor : 3.430)

41. Influence of m-fluorine substituted phenylene spacer dyes in dye-sensitized solar cells. T. Bhim Raju, J. V. Vaghasiya, M. A. Afroz, S. S. Soni, P. K. Iyer, Org. Electronics 2016, 39,371-379. (Impact Factor : 3.310)

42. Role of a phenothiazine/phenoxazine donor in solid ionic conductors for efficient solid state dye sensitized solar cells. Jayraj V. Vaghasiya, Keval K. Sonigara, Jyoti Prasad, Thomas Beuvier, Alain Gibaud, Saurabh S. Soni, J. Mater. Chem. A 2017, 5, 5373-5382. (Impact Factor : 11.301)

43. A Smart Flexible Zinc Battery with Colling Recovery Ability. J. Zhao, K. K. Sonigara, J. Li, J. Zhang, B. Chen, J. Zhang, S. S. Soni, X. Zhou, G. Cui, L. Chen, Angewandte Chemie International Edition 2017, 56, 7871-7875. (Impact Factor : 12.959)

44. Twisted donor substituted simple thiophene dyes retard the dye aggregation and charge recombination in dye – sensitized solar cells. T. B. Raju, J. V. Vaghasiya, M. A. Afroz, S. S. Soni, P. K. Iyer, Org. Electronics 2017, 50, 25-32. (Impact Factor : 3.310)

45. Iodine induced 1-D lamellar self assembly in organic ionic crystals for solid state dye sensitized solar cells. Jayraj V. Vaghsiya, Keval K. Sonigara, Thomas Beuvier, Alain Gibaud, Saurabh S. Soni, Nanoscale 2017, 9, 15949 - 15957 (Impact Factor : 6.895)

46. Effect of fluorine substitution and position on phenylene spacer in carbazole based organic sensitizers for dye sensitized solar cells. Mohammad Adil Afroz, Keval K. Sonigara, Telugu Bhim Raju, Saurabh S. Soni, Parameswar Krishnan Iyer, Phys. Chem. Chem. Phys. 2017, 19, 28579-28587 (Impact Factor : 3.430)

47. Effect of structural manipulation in hetero-tri-aryl amine donor-based D–A'–p–A sensitizers in dye-sensitized solar cells. Dinesh S. Patil, Keval K. Sonigara, Manoj M. Jadhav, Kiran C.

Avhad, Suryapratap Sharma, Saurabh S. Soni and Nagaiyan Sekar, New J. Chem. 2018, 42, 4361-4371. (Impact Factor : 3.288)

48. Dual functional hetero-anthracene based single component organic ionic conductors as redox mediator cum light harvester for solid state photoelectrochemical cells. J. V. Vaghasiya, K. K. Sonigara, S. S. Soni, S. Ching Tan , J. Mater. Chem. A 2018, 6, 4868-4877. (Impact Factor : 11.301)

49. Structure-efficiency relationship of newly synthesized 4-substituted donor-π-acceptor coumarins for dye-sensitized solar cells. M. M. Jadhav, J. V. Vaghasiya, D. S. Patil, S. S. Soni, N. Sekar., New J. Chem. 2018, 42, 5267-5275. (Impact Factor : 3.288)

50. Morphological study of electrophoretically deposited TiO2 film for DSSC application. Alkesh B. Patel, K. D. Patel, S. S. Soni, K. K. Sonigara, AIP Conference Proceedings 2018, 1961, 020008 (doi: 10.1063/1.5035201)

51. Anisotropic One-Dimensional Aqueous Polymer Gel Electrolyte for Photoelectrochemical Devices: Improvement in Hydrophobic TiO2− Dye/Electrolyte Interface Keval K. Sonigara, Jayraj V. Vaghasiya, Hiren K. Machhi, Jyoti Prasad, Alain Gibaud, Saurabh S. Soni, ACS Applied Energy Materials, 2018, 1 (8), 3665-3673. (Impact Factor : 4.45)

52. Low Cost and Efficient Hetero-anthracene Based Small Organic Hole Transporting Materials for Solid State Photoelectrochemical Cells. Jayraj V. Vaghasiya, Keval K. Sonigara, Mitesh H. Patel, Vaibhav K. Patel, N. Sekar, Saurabh S. Soni, Materials Today Energy, 2018, 09, 496-505. (Impact Factor : 5.604)

53. A Smart Flexible Solid State Photovoltaic Device with Cooling Recovery Feature. Keval K. Sonigara, Jayraj V. Vaghasiya, Hiren Machhi, Alain Gibaud, Tan Swee Ching, Saurabh S. Soni, Small, 2018, 1800842, 14(36), 1-8. (Impact Factor : 11.459)

54. Electrophoretically Deposited MoSe2/WSe2 Heterojunction from Ultrasonically Exfoliated Nanocrystals for Enhanced Electrochemical Photoresponse. Alkesh B. Patel, Hiren Machhi, Payal Chauhan, Som Narayan, Vijay Dixit, Saurabh S. Soni, Prafulla K. Jha, Gunvant K. Solanki, Kireetkumar D. Patel, Vivek M. Pathak., ACS Applied Materials & Interfaces, 2019, 11, 4093-4102. (Impact Factor : 8.456)

55. The Solavatochromism and Aggregation-induced Enhanced Emission of Tri-phenylamine substituted stryrene Derivatives and Its Application in Dye Sensitized Solar cells. Telugu Bhim Raju, Peddaboodi Gopikrishna, Jayraj V. Vaghsiya, Saurabh S. Soni, Parameshwar Krishnan Iyer. , J. Photochemistry & Photobiology A : Chem., 2019, 376, 12-21. (Impact Factor : 3.261)

56. Efficient power generating devices utilizing low intensity indoor lights via non-radiative energy transfer mechanism from organic ionic redox couples. Jayraj V. Vaghasiyaa, Keval K. Sonigara, Lakshmi Suresha, Majid Panahandeh-Fardc, Saurabh S. Soni, Swee Ching Tan , Nano Energy, 2019, 60, 457-466. (Impact Factor : 15.548)

57. Synthesis of novel colorants for DSSC to study effect of alkyl chain length alteration of autxiliary donor on light to current conversion efficiency. Manoj M. Jadhav, Jayraj V. Vaghsiya, Dinesh Patil, Saurabh S. Soni, Nagaiyan Sekar., J. Photochemistry & Photobiology A : Chem., 2019, 377, 119-129. (Impact Factor : 3.305)

58. Multi-Dentate Carbazole Based Schiff Base Dyes with Chlorovinylene Group in Spacer for Dye-Sensitized Solar Cells : A Combined theoretical and Experimental Study. Prerana K. M. Lokhande, Keval K. Sonigara, Manoj M. Jadhav, Dinesh Patil, Saurabh S. Soni, Nagaiyan Sekar., ChemistrySelect, 2019, 4, 4044-4056. (Impact Factor : 1.811)

59. Effect of donor Modification on the Photo-physical and Photo-voltaic properties of N-alkyl/aryl amine based chromophores. Manoj Jadhav, Jayraj V. Vaghasiya, Dinesh Patil, Saurabh S. Soni, Nagaiyan Sekar, New. J. Chem. 2019, 43, 8970-8981. (Impact Factor : 3.288)

60. Biphenyl-Amine-Based D-□-A'-□-A Sensitizers for DSSCs : Comparative Photo-Conversion Efficiency in Iodide/triiodide and Cobalt-Based Redox Electrolyte and DFT Study. Manish M. Raikwar, Keval K. Sonigara, Dinesh S. Patil, Hiren Machhi, Saurabh S. Soni, Nagaiyan Sekar, ChemistrySelect 2019, 4, 7371-7379. (Impact Factor : 1.811)

61. Harnessing the N-dopant ratio in carbon quantum dots for enhancing the power conversion efficiency of solar cells. Bhavita Mistry, Hiren K. Machhi, Ravi S. Vithalani, Dikin S. Patel, Chetan K. Modi, Meha Prajapati, Kiran R. Surati, Saurabh S. Soni, Prafulla K. Jha, Sanjeev R. Kane, Sustainable Energy Fuels 2019, 3, 3182-3190. (Impact Factor : 5.503)

62. Transferrable thin film of ultrasonically exfoliated MoSe2 nanocrystals for efficient visible-light photodetector. Alkesh B. Patel, Payal Chauhan, Hiren K. Machhi, Som Narayan, C. K. Sumesh, K. D. Patel, Saurabh S. Soni, P. K. Jha, G. K. Solanki, V. M. Pathak, Physica E : low-dimensional Systems and Nanostructures 2020, 119, 114019. (Impact Factor : 3.570)

63. Gel polymer electrolyte based on PVDF-HFP:PMMA incorporated with porpylene carbonate (PC) and diethyl carbonate (DEC) plasticizers : electrical, morphology, structural and electrochemical properties. Khushbu Gohel, D. K. Kanchan, Hiren K. Machhi, Saurabh S. Soni, C. Maheshwaran, Materials Research Express 2020, 7, 025301. (Impact Factor : 1.929)

64. Synthesis and computational study of coumarin thiophene-based D-π-A azo bridge colorants for DSSC and NLOphoric Application. Nitesh N. Ayare, Suryapratap Sharma,

Keval K. Sonigara, Jyoti Prasad, Saurabh S. Soni, Nagaiyan Sekar., Journal of Photochemistry & Photobiology A : Chemistry 2020, 394, 112466. (Impact Factor : 3.305)

65. Effect of mono- and di-anchoring dyes based on o,m-difluoro substituted phenylene spacer in liquid and solid state dye sensitized solar cells. Telugu Bhim Raju, Jayraj V. Vaghasiya, Mohammad Adil Afroz, Saurabh S. Soni, Parameswar Krishnan Iyer. , Dyes and Pigments 2020, 174, 108021. (Impact Factor : 4.613)

66. Organic Ionic plastic crytstals as Hole transporting layer for stable and efficient planar perovskite solar cells. Keval K. Sonigara, Zhipeng Shao, Jyoti Prasad, Hiren K. Machhi, Guanglei Cui, Shuping Pang, Saurabh S. Soni, Advanced Functional Materials, 2020, 2001460. (Impact Factor : 16.836)

67. Above 800 mV open circuit voltage in solid state photovoltaic devices using Phosphonium cation based solid ionic conductors. Jyoti Prasad, Hiren K. Machhi, Keval K. Sonigara, Vaibhav K. Patel, Saurabh S. Soni, ACS Applied Materials & Interfaces 2020, 20, 22939-22947. (Impact Factor : 8.456)

68. Immobilization of Agrobacterium tumefaciens D-psicose 3-epimerase onto titanium dioxide for bioconversion of rare sugar Enzyme and Microbial Technology. Sameer Dadhaiya, Vaibhav K. Patel, Saurabh S. Soni, Darshan H. Patel Enzyme and Microbial Technology 2020, 140, 109605. (Impact Factor : 3.448)

69. Yellowish-Orange Phosphorescent Iridium (III) Complexes of Bis-cyclometalated ligand with Pyrazolone derivatives : Synthesis, Characterizations, Photophysical and Thermal Properties. Meha J. Prajapati, Jaydip D. Solanki, Hiren K. Machhi, Saurabh S. Soni, Pratik Sen, Kirankumar R. Surati, Journal of Materials Science : Materials in Electronics 2020, 31, 13778-13786. (Impact Factor : 2.220)

70. Contribution in Light Harvesting by Solid Ionic Conductors for Efficient Photoelectrochemical Cells: An Effect of Identical Donor Molecule in Sensitizers and Electrolytes, Jayraj V. Vaghasiya, Keval K. Sonigara, Jyoti Prasad, Mohammad Qureshi, Swee Ching Tan, Saurabh S. Soni, ACS Applied Energy Materials 2020, 3(7), 7073-7082. (Impact Factor : 4.45)

71. Dithienopyrrolobenzothiadiazole-carbazole based D-□-A-□-D p-type conjugated material. Vinay S. Kadam, Prachi A. Bhatt, Hiren K. Machhi, Saurabh S. Soni, Sanjio S. Zade, Arun L. Patel, Nano Select 2020, 2020:1-8. (Impact Factor : NA)

72. Design and development of dithienopyrrolobenzothiadiazole (DTPBT)-based rigid conjugated polymers with improved hole mobilities. Viraj J. Bhanvadia, Hiren K. Machhi, Saurabh S. Soni, Sanjio S. Zade, Arun L. Patel, Polymer 2020, 211, 123089. (Impact Factor : 4.231)

73. Self-Assembled Solid-State Gel Catholyte Combating Iodide Diffusion and Self-Discharge for a Stable Flexible Aqueous Zn–I2 Battery. Keval K. Sonigara, Jingwen Zhao, Hiren K. Machhi, Guanglei Cui, Saurabh S. Soni, Advanced Energy Materials 2020, 2001997(1-10). (Impact Factor : 25.452)

74. Augmentation in photocurrent through organic ionic plastic crystals as an efficient redox mediator for solid-state mesoscopic. Keval K. Sonigara, Jayraj V. Vaghasiya, Jyoti Prasad, Hiren K. Machhi, Mohammad Shaad Ansari, Mohammad Qureshi, Saurabh S. Soni, Sustainable Energy Fuels 2021, 5, 1466–1476. (Impact Factor : 5.503)

75. A dual-response naphthalene-armed calix[4]arene based fluorescence receptor for Zr(IV) and Fe(II) via Ligand to metal charge transfer. Pinkesh G. Sutariya, Heni Soni, Sahaj A. Gandhi, Saurabh S. Soni, Jyoti Prasad, Sensors and Actuators B: Chemical, 2021, 331, 129417. (Impact Factor : 7.1)

76. Superior electrochemical activity of CdSe thin film by chromium substitutional doping. Payal Chauhan, Alkesh B. Patel, Som Narayan, Jyoti Prasad, C. K. Sumesh, G. K. Solanki, K. D. Patel, Saurabh S. Soni, P. K. Jha, V. M. Pathak, Vikas Patel, Journal of Alloys and Compounds 2021, 862, 158016. (Impact Factor : 4.650)

List of Minor/ Major projects carried out : 7

SR. NO.	TITLE	FUNDING AGENCY	PERIOD	GRANT/ AMOUNT MOBILIZED (RS.)
1.	Development of High Efficiency, Low Cost Dye Sensitized Solar Cell	DST, New Delhi	July 2009-August 2012	Rs. 20,43,508/-
2.	Influence of Micellar Morphology on Conductivity of Polymer Gel Electrolytes	UGC-DAE, Mumbai	1st April 2012 – 31st March 2015	Rs. 5,92,000/-
3.	Development of porous functionalized metal oxides and their application in metal ion removal	UGC, New Delhi	1st July 2012 – 30st June 2015	Rs. 10,35,300/-
4.	Development of Water Based Polymer Gel Electrolytes for Advanced Devices	SERB-DST, New Delhi	1st April 2013 – 31st March 2016	Rs. 25,40,800/-
5.	Scaling up of the dye sensitized solar cell fabrication	DST, New Delhi	1st Sept. 2014-31st Aug. 2016	Rs. 87,58,816/-

6.	Colored fluorescent conducting oligomers/ monomers for Dye Sensitized Solar Cells (PI : Prof. Dr. N. Sekar & Co-PI : Dr. S. S. Soni)	DST, New Delhi	1st August 2016 – 30th Nov. 2019	Rs. 88,78,099/-
7.	Effect of various metal salts on micelles of Amphiphilic Block Copolymers for Energy Storage Applications	UGC-DAE CSR, Mumbai	1st Jan. 2018 – 31st March 2021	Rs. 6,10,075/-

Others

Honors/Awards

- DST Young Scientist Award (2011)
- IAAM Scientist Medal (2017)
- INSA-CAS Bilateral Exchange Scientist
- Sardar Patel Research Award (2018-19)
- GSA-Dr. A K Shah best Research Paper Award (2018)

Highlights of achievements

- Received Three years membership of American Chemical Society (2015-18)
- Developed a Dye Solar Cell module upto TRL level 7