

## Resume

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### **Academic Qualification:**

Degree	Institute Place	Year	Grade	Subjects
Ph. D.	Sardar Patel University	1996	*	Chemistry
M. Sc.	Sardar Patel University	1992	I	Organic Chemistry
B.Sc.	Sardar Patel University	1990	I	Chemistry

Title of thesis : Synthesis, Characterization and Application of Polyester and Poly(aryl-ether-ether-ketone)[PEEK] Resins.

### **Professional and Research Experience:**

Sr. No.	Institution Place	Position	Duration
1.	Department of Chemistry Sardar Patel University	Professor	Jan. 2009 to till date
2.	Department of Chemistry Sardar Patel University	Associate Professor	Feb. 2002 to Dec.2008
3.	Department of Chemistry Sardar Patel University	Sr. Lecturer	Sept. 2000 – Jan 2002
4.	Department of Chemistry Sardar Patel University	Lecturer	Sept. 1996 –Sept. 2000
5.	Heubach Colour Pvt. Ltd., Ankleshwar, Gujarat	Sr. R & D Officer	May 1996 – Sept. 1996

## Research Achievements:

Contents	Number	Details attached on
List of Publications	137	Appendix –I
Ph.D. Student guided + At present	25 + 5	Appendix –II
Projects Carried out / On going	7	Appendix –III
Article published in Book	02	Appendix –III
Awards/achievements	5	Appendix –IV
Papers Presented in Conference/ Seminar/ Symposia	71	-
Membership (Academic/professional bodies and other)	-	Appendix –VI

## Appendix –VI

### Membership:

- Fellow of Royal Society of Chemistry (FRSC).
- The Society for Polymer Science (SPS), New Delhi, India (Life Member)
- Indian Council of Chemist (ICC), Agra, India (Life Member)
- The Indian Society of Analytical Scientist, India (ISAS) (Life Member)
- Society for Materials Chemistry, India (Life Member)
- American Chemical Society (Membership No. 2405719), 2006-2007
- Board of Study (Chemistry)
- DRC member of Department of Material Science, Sardar Patel Univesrity, V.V. Nagar.
- Adhoc PG Board of Study (Chemistry), 2005-2010
- Member of the committee to reframe the syllabus for M. Sc. Chemistry
- Member of the committee to reframe the syllabus for M. Sc. Chemistry as per CBCS
- Secretary, Sardar Patel University Teacher Association (SPUTA), V.V.Nagar.
- President-2013, JCI Milkcity, Anand (Executive committee member)
- 17 Gam Patidar Samaj, Anand (Executive committee member/Life Member)
- Member of Departmental IQAC committee, Chemistry Department, S.P. University.

**LIST OF PUBLICATIONS:**

1. Fe<sub>3</sub>O<sub>4</sub> modified chitosan based co-polymeric magnetic composite hydrogel: Synthesis, characterization and evaluation for the removal of methylene blue from aqueous solutions, Roshni D. Hingrajiya and Manish P. Patel *International Journal of Biological Macromolecules*, **2023**, 244 (7), 125251. **[I.F.: 8.2]**  
<https://doi.org/10.1016/j.ijbiomac.2023.125251>
2. Synthesis of novel indole-oxindole clubbed 1,2,3-triazole hybrids: antimicrobial evaluation and molecular docking study, Jaydeep A. Mokariya, Reena C. Patel, Dhanji P. Rajani & Manish P. Patel, *Research on Chemical Intermediates*, **2023**, 49, Issue 7 , 2933-2953. **[I.F.: 3.3]**
3. Copper sulphate immobilized on P(AN-NIPAM-MBAM) terpolymer as a highly efficient catalyst for the selective reduction of nitro-arenes, Anirudhdha G Kalola, Pratibha Prasad, Roshni D Hingrajiya & Manish P Patel, *Indian J. Chem.*, 62 (6), 644-655. **[I.F.: 0.45]**
4. 1, 2, 4-Triazole and benzimidazole fused dihydropyrimidine derivatives: Design, green synthesis, antibacterial, antitubercular, and antimalarial activities, JA Mokariya, DP Rajani, MP Patel, *Archiv der Pharmazie*, **2022**, e2200545 **[I.F.: 4.613]**
5. Selective capture of anionic and cationic dyes via chitosan-g-poly-(IA-co-DADMAC)/Fe<sub>3</sub>O<sub>4</sub> polymer composite hydrogel, SR Patel, MP Patel, *Polymer Bulletin*, **2022**, 79, 11079–11101 **[I.F.: 3.2]**
6. Poly (AA-co-NVIm-co-AAm) sensor hydrogels for the simultaneous visual detection and removal of Cu<sup>2+</sup> ions from aqueous media, RD Hingrajiya, AG Kalola, MP Patel, *Polymer Bulletin*, **2022**, 80 (9), 10099–10124 **[I.F.: 3.2]**
7. Antitubercular, antimalarial activity and molecular docking study of new synthesized 7-chloroquinoline derivatives, AJ Patel, MP Patel, AB Dholakia, VC Patel, DS Patel, *Polycyclic Aromatic Compounds*, **2022**, 42, 4717-4725 **[I.F.: 2.195]**
8. Anomaly of Pyrano[2,3-c]pyrazole Synthesis towards Pyrazolyl-aryl-methyl-malononitrile Derivatives and Their Antimicrobial Activity Jaydeep A. Mokariya, Dhanji P. Rajani, and Manish P. Patel, *ChemistrySelect* **7**, e202201341 (1 of 7) **(2022) [I.F.: 2.307]**.
9. Reduction of aliphatic, aromatic and heteroaromatic carboxylic acid derivatives to alcohol promoted by trityl resin under presence of copper sulphate and sodium borohydride catalytic system, Anirudhdha G. Kalola, Pratibha Prasad, Jaydeep A. Mokariya, and Manish P. Patel, issue no.1 of vol.**12**, *Heterocyclic letters*, 87-99 2022. **[SJIF. : 7.231]**
10. Biological activity and Drug Like Score of New Synthesized Quinoline Derivatives Incorporated with Pyridine and 1,3,4-thiadiazole moiety, Ankit J. Patel, Manish P. Patel , Amitkumar B. Dholakia, Vishant C. Patel and Darshan S. Patel, *Indian Drugs*, **2022**, 59 (06) 23-29 **(Impact Score 0.17)**
11. Selective capture of anionic and cationic dyes via chitosan-g-poly-(IA-co-DADMAC)/Fe<sub>3</sub>O<sub>4</sub> polymer composite hydrogel, Shital R. Patel , Manish P. Patel,

- Polymer Bulletin*, 79, 11079–11101 (2022), <https://doi.org/10.1007/s00289-021-04017-w> [I.F.: 2.014].
12. A mild and selective Cu(II) salts-catalyzed reduction of nitro, azo, azoxy, N-aryl hydroxylamine, nitroso, acid halide, ester, and azide compounds using hydrogen surrogacy of sodium borohydride, Anirudhdha G. Kalola, Pratibha Prasad, Jaydeep A. Mokariya, and Manish P. Patel, *SYNTHETIC COMMUNICATIONS*, (2021), VOL. 51, NO. 23, 3565–3589 <https://doi.org/10.1080/00397911.2021.1983604> [I.F.: 2.007]
  13. Simultaneous ultrasound- and microwave-assisted one-pot ‘click’ synthesis of 3-formyl-indole clubbed 1,2,3-triazole derivatives and their biological evaluation, Jaydeep A. Mokariya, Anirudhdha G. Kalola, Pratibha Prasad, Manish P. Patel, *Molecular Diversity*, **26**, 963–979 (2022) [I.F.: 2.013] <https://doi.org/10.1007/s11030-021-10212-8>.
  14. Green and facile preparation of ultrasonic wave-assisted chitosan-g-poly-(AA/DAMPB)/-Fe<sub>3</sub>O<sub>4</sub> composite hydrogel for sequestration of reactive black 5 dye, Shital R. Patel , Rasmika H. Patel & Manish P. Patel, *Polymer Bulletin*, **62(1)**, 1-25, 2021,. [I.F.: 2.014] <https://doi.org/10.1007/s00289-021-03662-5>.
  15. Eco-friendly bioadsorbent-based polymer composites as a pH-responsive material for selective removal of anionic and azo dyes from aqueous solutions, Shital R. Patel , Rasmika H. Patel & Manish P. Patel, *Journal of Macromolecular Science, Part A Pure and Applied Chemistry*, **58** (2) 97-110, 2021. [I.F.: 1.349] <https://doi.org/10.1080/10601325.2020.1827957>.
  16. Design and synthesis of imidazole based quinolone derivatives as antimicrobial and antitubercular agents, Pratik G. Shobhashana and Manish P. Patel, *Asian Journal of Research in Chemistry and Pharmaceutical Sciences*, **7(2)**, 726-733, 2019. [I.F.: 3.0]
  17. Synthesis of imidazole derivatives bearing quinolone nucleus catalysed by CAN and their antimicrobial, antitubercular and molecular docking studies, Pratik G. Shobhashana, Pratibha Prasad, Anirudhdha G. Kalola and Manish P. Patel, *Research Journal of Life Sciences, Bioinformatics, Pharmaceuticals and Chemical Sciences*, **4(3)** 175-186, 2018. [I.F.: 0.35]
  18. Microwave assisted one-pot synthetic route to imidazo[1,2-a]pyrimidine derivatives of imidazo/triazole clubbed pyrazole and their pharmacological screening, Pratibha Prasad, Anirudhdha G. Kalola and Manish P. Patel, *New J. Chem*, **42**, 12666-12676, 2018. [I.F.: 3.069]
  19. Microwave assisted synthesis of halo-aryl-substituted-1H-pyrazol-pyridine moiety and study on “Effect of halogen substitution on antimicrobial activity”, Nileshkumar D. Vala and Manish P. Patel, *Heterocyclic Letter*, **8**, (2),385-393, 2018. [SJIF. : 6.691]
  20. An efficient synthesis of 4H-pyranoquinolinone derivatives catalysed by a versatile organocatalyst tetra-n-butylammonium fluoride and their pharmacological screening, Pratibha Prasad, Pratik G. Shobhashana and Manish P. Patel, *R. Soc. Open Sci.* **4**, (Dec), 70764, 2017. [I.F.: 2.515]
  21. Synthesis, characterization of new 1,2,4-triazole derivatives bearing quinoline nucleus and their antimicrobial and antitubercular evaluation, Pratik. G. Shobhashana, Pratibha Prasad and Manish P. Patel, *Heterocyclic Letter*, **7**, (3), 819-828, 2017. [SJIF. : 6.659]
  22. Synthesis and characterization of microwave induced pyrano[3,2-c] chromene, pyrano[4,3-b]pyran and 4H-chromene derivatives of substituted 2-(4-substituted phenyl)-N-allylamine and their biological screening, Pratibha Prasad, Pratik. G. Shobhashana, and Manish P. Patel, *Heterocyclic Letter*, **7**, (3), 775-789, 2017. [SJIF. : 6.659]

23. Antimicrobial and antioxidant evaluation of new quinolone based aurone analogs, Hardik H. Jardosh and Manish P. Patel, *Arabian Journal of Chemistry*, **10**, S3781-S3791 2017. [**I. F.:** **3.613**]
24. Microwave-assisted, solvent-free, one-pot, three-component synthesis of fused pyran derivatives containing benzothiazole nucleus catalyzed by pyrrolidine-acetic acid and their biological evaluation, Haresh B. Patel, Jayvirsinh D. Gohil, Manish P. Patel, *Monatsh Chem*, **148** (6) 1057-1067, 2017. [**I. F.:** **1.131**]
25. Library design, synthesis and biological exploration of novel 3,4'-bicarbostryl derivatives as potent antimicrobial, antitubercular and antimalarial agents, Hardik H. Jardosh, Nileshkumar D. Vala, Manish P. Patel, *Med Chem Res*, **26(5)**, 881-899, 2017. [**I. F.:** **1.436**]
26. Ultrasound promoted L- proline catalyzed facile synthesis and antimicrobial evaluation of 4H-chromeno[2,3-d] pyrimidine derivatives incorporated with quinoline moiety, Ankit J. Patel, Manish P. Patel, *Indian Drugs*, **54**, (09), 16-23, 2017. [**I. F.:** **0.172**]
27. Ultrasound promoted efficient synthesis of new tetrazolo[1,5-a]quinoline derivatives and their comparative antimicrobial and anti tubercular study, Ankit J. Patel, Manish P. Patel; *Heterocyclic Letter*, **6**, (2) 185-194, 2016. [**SJIF. :** **6.634**]
28. Synthesis and microbial studies of new pyrazoline/isoxazoline derivatives bearing quinoline moiety using ultrasound irradiation, Ankit J. Patel, Manish P. Patel, *Indian Journal of Advances in Chemical Science*, **4**(4) 409-420, 2016.
29. A novel approach for the synthesis of hydrogel nanoparticles and a removal study of reactive dyes from industrial effluent, Viran P. Mahida, Manish P. Patel, *RSC Advances*, **6**, 21577- 21589, 2016. [**I. F. :** **3.84**]
30. Removal of some most hazardous cationic dyes using novel poly (NIPAAm /AA/Nallylisatin) nanohydrogel, Viran P. Mahida and Manish P. Patel, *Arabian Journal of Chemistry*, **9**, 430-442, 2016, [**I. F.:** **3.725**]
31. PS-TBD triggered general protocol for the synthesis of 4H-chromene, pyrano[4,3-b]pyran and pyrano[3,2-c]chromene derivatives of 1H-pyrazole and their biological activities, Nileshkumar D. Vala, Hardik H. Jardosh, Manish P. Patel, *Chinese Chemical Letters*, **27**, 168-172, 2016. (**I. F. :** **1.587**)
32. Green approach for the facile construction of pyrazolylypyrazoline bearing benzothiazole derivatives and its biological evaluation; Haresh B. Patel, Jayvirsinh D. Gohil, Manish P. Patel; *Heterocyclic Letters*, **6**, 31-42, 2016. [**SJIF. :** **6.634**]
33. Superabsorbent amphoteric nanohydrogels: Synthesis, characterization and dyes adsorption studies, Viran P. Mahida, Manish P. Patel, *Chinese Chemical Letters*, **27**, 471-474, 2016. [**I. F. :** **1.587**]
34. Comparative study on the use of conventional, microwave and ultrasound irradiation for the synthesis of pyrano[3,2-c]chromene and benzopyrano[4,3-b]chromene derivatives in water; Jayvirsinh D. Gohil, Haresh Patel, Manish P. Patel; *Heterocyclic Letter*, **6**, 123-132, 2016. [**SJIF. :** **6.634**]
35. Synthesis and evaluation of new chromene based [1,8]naphthyridines derivatives as potential antimicrobial agents, Jayvirsinh D. Gohil, Haresh Patel, Manish P. Patel; *RSC Adv.*, **6**, 74726-74733, 2016. [**I. F. :** **3.361**]

36. Ultrasound Assisted Synthesis of Triazole/Tetrazole Hybrids Based New Biquinoline Derivatives as a New Class of Antimicrobial and Antitubercular Agents; Jayvirsinh D. Gohil, Haresh Patel, Manish Patel, *Indian Journal of Advances in Chemical Science*, **4**, 102-113, 2016. [**SJIF. : 2.63**]
37. New approach for the synthesis of spiro indolinone incorporated 1,2,4-triazolo[1,5-a]quinoline derivatives and their pharmacological screening, Gaurav G. Ladani, Manish P. Patel, *Heterocyclic Letters*, **6 (3)**, 393-405, 2016. [**SJIF. : 6.634**]
38. Synthesis of imidazole[4,5-C] quinoline derivatives via hofmann rearrangement in the presence of iodobenzene diacetate and its biological evaluation, Gaurav G. Ladani, Manish P. Patel, *Heterocyclic letters*, **6 (3)**, 459-469. 2016. [**SJIF. : 6.634**]
39. Removal of heavy metal ions from aqueous solution by superabsorbent poly (NIPAAm/DAPB/AA) amphoteric nanohydrogel, Viran P. Mahida, Manish P. Patel, *Desalination and Water Treatment*, **57 (29)**, 13733-13746, 2016. (**I. F. : 1.173**)
40. Regioselective one-pot three-component synthesis of quinoline based 1,2,4-triazolo[1,5-a]quinoline derivatives, Gaurav G. Ladani, Manish P. Patel, *RSC Advances*, **5**, 76943-76948, 2015. [**I. F. : 3.84**]
41. Novel 1,3,4-oxadiazole motifs bearing quinoline nucleus: synthesis, characterization and their biological evaluation for antimicrobial, antitubercular, antimalarial and cytotoxic activity Gaurav G. Ladani, Manish P. Patel, *New Journal of Chemistry*, **39**, 9848-9857, 2015. [**I. F. : 3.086**]
42. Zinc triflate promoted general synthetic protocol for the facile construction of chromenes and pyrimidines bearing *N*-allyl quinolone nucleus, Nileshkumar D. Vala, Hardik H. Jardosh, Manish P. Patel, *International Letters of Chemistry, Physics and Astronomy*; **8**, 199-207, 2015.
43. Pyrazole-quinolone-isoniazid hybrids: synthesis, characterization and *in vitro* evaluation as a new class of antimicrobial and antitubercular agents, Nileshkumar D. Vala and Manish P. Patel, *Heterocyclic Letters*; **5**, 609-620, 2015. [**SJIF. : 6.152**]
44. Design and synthesis of new (bis)trifluoromethyl-promoted *N*-aryl biquinoline derivatives as antitubercular and antimicrobial agents, Mehul B. Kanani and Manish P. Patel, *Medicinal Chemistry Research*, 24,563-575 (2015) [**I. F.- 1.612**]
45. Synthesis of *N*-arylquinolone derivatives bearing 2-thiophenoxyquinolines and their antimicrobial evaluation, Mehul B. Kanani and Manish P. Patel, *Chinese Chemical Letters*, **25**, 1073-1076, 2014. [**I. F.- 1.587**]
46. Facile construction of densely functionalized thiopyrano[2,3-b]quinolines via three-component reactions catalyzed by L-proline, Mehul B. Kanani and Manish P. Patel, *RSC Adv.*, **4**, 28798–28801 (2014). [**I. F.- 2.562**]
47. Synthesis of new superabsorbent poly (NIPAAm/AA/*N*-allylisatin) nanohydrogel for effective removal of As(V) and Cd(II) toxic metal ions, Viran P. Mahida and Manish P. Patel, *Chinese Chemical Letters*, **25**,602-604, (2014). [**I. F.- 1.587**]
48. Design and synthesis of biquinolone-isoniazid hybrids as a new class of antitubercular and antimicrobial agents, Hardik H. Jardosh and Manish P. Patel, *European Journal of Medicinal Chemistry*, **65**, 348-359 (2013). [**I. F.- 3.499**]
49. Adsorption of azo dyes from water by new poly (3-acrylamidopropyl)-trimethylammonium chloride-co-*N,N*-dimethylacrylamide super- absorbent hydrogel—Equilibrium and kinetic

- studies, Yatin N. Patel and Manish P. Patel, *J. Environ. Chem. Eng.*, **1**(4), 1368-1374 (2013).
50. A new fast swelling poly[DAPB-co-DMAAm-co-AASS] superabsorbent hydrogel for removal of anionic dyes from water, Yatin N. Patel and Manish P. Patel, *Chinese Chemical Letters*, **24**, 1005-1007, (2013). [**I. F.- 1.210**]
  51. Synthesis of 2-amino-4H-chromene derivatives under microwave irradiation and their antimicrobial activity, Nirav K Shah, Nimesh M Shah, Manish P Patel and Ranjan G Patel, *Journal of Chemical Science.*, **125**, 3, 525-530, (2013). [**I. F.- 1.298**]
  52. An efficient-synthesis of 3'-indolyl substituted pyrido[1,2-*a*]benzimidazoles as potential antimicrobial and antioxidant agents, Harshad G. Kathrotiya and Manish P. Patel, *Journal of Chemical Sciences* 125,993-1001(2013). [**I.F.-1.298**]
  53. Synthesis and identification of  $\beta$ -aryloxyquinoline based diversely fluorine substituted *N*-aryl quinolone derivatives as a new class of antimicrobial, antituberculosis and antioxidant agents, Harshad G. Kathrotiya and Manish P. Patel, *European Journal of Medicinal Chemistry*, **63**,675-684 (2013). [**I. F.- 3.499**]
  54. One step synthesis of pyrido[1,2-*a*]benzimidazole derivatives of aryloxy pyrazole and their antimicrobial evaluation, Hardik H. Jardosh, Chetan B. Sangani, Manish P. Patel, Ranjan G. Patel, *Chinese Chemical Letters*, **24**,123-126 (2013). [**I. F.- 1.210**]
  55. Microwave-induced CAN promoted atom-economic synthesis of 1H-benzo[*b*]xanthene and 4H-benzo[*g*]chromene derivatives of *N*-allyl quinolone and their antimicrobial activity, Hardik H. Jardosh and Manish P. Patel, *Medicinal Chemistry Research*, **22**, 2954-2963 (2013). [**I. F.- 1.271**]
  56. Microwave-assisted CAN-catalyzed solvent-free synthesis of *N*-allyl quinolone-based pyrano[4,3-*b*]chromene and benzopyrano[3,2-*c*]chromene derivatives and their antimicrobial activity, Hardik H. Jardosh and Manish P. Patel, *Medicinal Chemistry Research*, **22**, 905-915 (2013). [**I. F.- 1.271**]
  57. Microwave-assisted synthesis of pyrido[1,2-*a*]benzimidazole derivatives of  $\beta$ -aryloxy quinoline and their antimicrobial and antituberculosis activities, Chetan B. Sangani, Hardik H. Jardosh, Manish P. Patel, Ranjan G. Patel, *Medicinal Chemistry Research*, **22**,3035-3047 (2013). [**I. F.- 1.271**]
  58. Synthesis and *in vitro* antimicrobial evaluation of novel 2-amino-6-(phenylthio)-4-(2-(phenylthio)quinolin-3-yl)pyridine-3,5-dicarbonitriles, Mehul B. Kanani and Manish P. Patel, *Medicinal Chemistry Research*, **22**, 2912-2920 (2013). [**I. F.- 1.271**]
  59. Microwave-assisted synthesis of novel 4H-chromene derivatives bearing 2-aryloxyquinoline and their antimicrobial activity assessment, Chetan B. Sangani, Nimesh M. Shah, Manish P. Patel, Ranjan G. Patel, *Medicinal Chemistry Research*, **22**, 3831-3842, (2013). [**I. F.- 1.271**]
  60. New *N*-arylamino biquinoline derivatives: microwave-assisted synthesis and their antimicrobial activities, Nimesh M. Shah, Manish P. Patel, Ranjan G. Patel, *Medicinal Chemistry Research*, **22**, 312-322 (2013). [**I. F.- 1.271**]
  61. Microwave-assisted synthesis of novel 4H-chromene derivatives bearing phenoxy pyrazole and their antimicrobial activity assessment, Chetan B. Sangani, Nimesh M. Shah, Manish P. Patel, Ranjan G. Patel, *J. Serb. Chem. Soc.* **77** (9), 1165-1174 (2012). [**I. F.- 0.934**]

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63. Synthesis, characterization and antimicrobial activity of some new biquinoline derivatives containing a thiazole moiety, Nirav K. Shah, Nimesh. M. Shah, Manish. P. Patel, Ranjan. G. Patel, *Chinese Chemical Letters*, **23**, 454-457 (2012). [I. F.- 1.210]
64. An Efficient and Facile Synthesis of 1*H*-Pyrazolo[1,2-*b*]phthalazine-5,10-dione Derivatives of Biological Interest, Nimesh. M. Shah, Manish. P. Patel, Ranjan. G. Patel, *Journal of Heterocyclic Chemistry*, **49**, 1310-1316 (2012). [I. F.- 1.210]
65. Synthesis and *in vitro* antimicrobial evaluation of penta-substituted pyridine derivatives bearing the quinoline nucleus. Jigar. A. Makawana, Manish. P. Patel, Ranjan. G. Patel, *Medicinal Chemistry Research*, **21**, 616-623 (2012). [I. F.- 1.271]
66. Novel Cationic Poly[AAm/NVP/DAPB] Hydrogels for Removal of Some Textile Anionic Dyes from Aqueous Solution, Yatin N. Patel and Manish P. Patel, *Journal of Macromolecular Science Part A: Pure and Applied Chemistry*, **49**, 1-12 (2012). [I.F.- 0.807]
67. Synthesis and *in vitro* antimicrobial screening of new pyrano[4-3-*b*]pyrane derivatives of 1*H*-pyrazole, Chetan. B. Sangani, Divyesh. C. Mungra, Manish. P. Patel, Ranjan. G. Patel, *Chinese Chemical Letters*, **23**, 57-60 (2012). [I. F.- 1.210]
68. Synthesis and *in vitro* antimicrobial activity of *N*-arylquinoline derivatives bearing 2-morpholinoquinoline moiety, Jigar. A. Makawana, Manish. P. Patel, Ranjan. G. Patel, *Chinese Chemical Letters*, **23**, 427-430 (2012). [I. F.- 1.210]
69. New *N*-arylamino biquinoline derivatives: Synthesis, antimicrobial, antituberculosis, and antimalarial evaluation, Nimesh. M. Shah, Manish. P. Patel, Ranjan. G. Patel, *European Journal of Medicinal Chemistry*, **54**, 239-247 (2012). [I. F.- 3.499]
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72. Zn(OTf)<sub>2</sub>-catalyzed three component, one-pot cyclocondensation reaction of some new octahydroquinazolinone derivatives and access their bio-potential, Pushpak. M. Shah, Manish. P. Patel, *Medicinal Chemistry Research*, **21**, 1188-1198 (2012). [I. F.- 1.271]
73. A three component one-pot synthesis and biological studies of some new octahydroacridine-1,8-dione derivatives containing tetrazolo[1,5-*a*]quinoline moiety, Sandip V Bhuva and Manish P Patel, *Indian Journal of Chemistry*, **51B**, 1388-1395 (2012). [I. F.- 0.648]
74. A one-pot synthesis of pyrano[6,5-*b*]quinoline derivative and their biological studies, Chetan. B. Sangani, Divyesh. C. Mungra, Manish. P. Patel, Ranjan. G. Patel, *Journal of Serbian Chemical Society*, **77** (9), 1165-1174 (2012). [I. F.- 0.934]
75. The design, synthesis and antimicrobial activity of new biquinoline derivatives, Nirav K. Shah, Nimish M. Shah, Manish P. Patel, Ranjan G. Patel, *J. Serb. Chem. Soc.*, **77** (3), 279-286 (2012). [I. F.- 0.934]



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77. Molecular iodine catalyzed synthesis of tetrazolo[1,5-*a*]-quinoline based imidazoles as a new class of antimicrobial and antituberculosis agents. Divyesh C. Mungra, Harshad G. Kathrotiya, Niraj K. Ladani, Manish P. Patel, Ranjan G. Patel, *Chinese Chemical Letters* **23**, 1367-1370 (2012). [I. F.- 1.210]
78. Microwave-assisted multicomponent synthesis of 3'-indolyl substituted pyrano[2,3-*c*]pyrazoles and their antimicrobial activity, Harsad G. Kathrotiya, Ranjan G. Patel, Manish P. Patel, *J. Serb. Chem. Soc.* **77 (8)**, 983-991 (2012). [I. F.- 0.934]
79. Microwave-assisted synthesis of 3'-indolyl substituted 4*H*-chromenes catalysed by DMAP and their antimicrobial activity, Harshad G. Kathrotiya and Manish P. Patel, *Medicinal Chemistry Research*, Harshad **21**, 3406-3416 (2012). [I. F.- 1.271]
80. Synthesis and antimicrobial evaluation of new pyrano[4,5-*b*]pyran and pyrano[3,2-*c*]chromene derivatives bearing 2-thiophenoxy quinoline nucleus, Jigar A. Makawana, Manish P. Patel, Ranjan P. Patel, *Arch. Pharm. Chem. Life Sci.*, **345**, 314-322 (2012). [I. F.- 1.54]
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85. Synthesis and identification of  $\beta$ -aryloxy quinolines and their pyrano [3,2-*c*]chromene derivatives as a new class of antimicrobial and antituberculosis agents, Divyesh C. Mungra, Manish P. Patel, Dhanji P. Ranjani and Ranjan P. Patel *European Journal of Medicinal Chemistry*, **46**, 4192-4200 (2011). [I. F.- 3.499]
86. Zn(II) chloride catalyzed one pot synthesis of some new 4-thiazolidinone derivatives as biologically potent agents, Pushpak M. Shah and Manish P. Patel, *Indian Journal of Chemistry, section-B*, **50B**, 310-314 (2011). [I. F.- 0.648]
87. Super absorbent hydrogel based on poly[acrylamide/maleic acid/2-methacryloxy ethyl trimethylammonium chloride]: synthesis, characterization and their application in the removal of chromium (VI) from aqueous solution, Ankit M. Patel, Manish P. Patel, Ranjan G. Patel, *Journal of Macromolecular Science Part-A, Pure and Applied Chemistry* **48 (5)**, 339-347 (2011). [I.F.- 0.807]

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101. A new cationic poly[1-vinyl-3-ethyl imadazolium iodide], P(VEII) hydrogel for the effective removal of chromium (VI) from aqueous solution Pratish V. Dadhaniya, Ankit M.

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111. Synthesis and studies of the biological activity of novel pyrimidino fused acridine derivatives, B. B. Patel, R. G. Patel and M. P. Patel, *J. Serb. Chem. Soc.*, **71** (10), 1015-1023 (2006). [I. F.- 0.934]
112. Swelling and dye adsorption study of novel superswelling [Acrylamide/N-vinylpyrrolidone/3(2-hydroxyethyl carbamoyl)acrylic acid]hydrogels, Pratish V. Dadhaniya, Manish P. Patel, Ranjan G. Patel, *Polymer Bulletin* **57**, 21-31 (2006). [I. F.- 1.332]
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114. Synthesis, characterization and anti-bacterial activity of some new 2,3,6-trisubstituted quinazolin-4(3H)-ones, Rohit D. Patel, Manish P. Patel & Ranjan G. Patel, *Indian Journal of Chemistry*, **44B**, Sept. 1944-1946 [2005]. [I. F.- 0.648]

115. Synthesis and characterization of novel substituted spiro[isobenzofuran-1(3H),9'-xanthene]-3-ones, Sachin V. Patel Manish P. Patel and Ranjan G. Patel, *J. Serb. Chem. Soc.*, **70** (7), 931-936 (2005). [**I. F.- 0.934**]
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117. 3,6-Disubstituted fluorans containing 4(3H)-quinazolinon-3-yl, diethyl amino groups and their application in reversible thermochromic materials, Ritesh G. Patel, Manish P. Patel and Ranjan G. Patel, *Dyes and Pigments*, **66**(1), 7-13 (2005). [**I. F.- 3.532**]
118. Synthesis and characterization of chromogenic fluoran compounds containing 4-keto-quinazolinone moieties, Ritesh G. Patel, Manish P. Patel and Rajan G. Patel, *J. Serb. Chem. Soc.*, **69** (5) 327-333 (2004). [**I. F.- 0.934**]
119. Synthesis and characterization of ether linkage containing bis-fluoran compounds", Ritesh G. Patel, Jignesh V. Patel, Manish P. Patel and Rajan G. Patel, *J. Serb. Chem. Soc.*, **68** (8-9), 607-613 (2003). [**I. F.- 0.934**]
120. Synthesis and curing kinetics of coloured epoxy resin containing azo moiety, Milan R. Patel, Manish P. Patel, Ranjan G. Patel and Rashmika H. Patel, *The International Journal of Polymeric Materials*, Vol. **52** (3), 211-218 (2003). [**I. F.- 1.83**]
121. Synthesis and application of novel heterocyclic dyes based on 11-amino-13H-acenaphtho[1,2-e]pyridazino[3,2-b]quinazolin-13-one, Vijay H. Patel, Manish P. Patel, (Miss) Ranjan G. Patel, *J. Serb. Chem. Soc.*, **67** (11), 727-734 (2002). [**I. F.- 0.934**]
122. Disperse dyes based on 2-methyl-3-[3'-aminophthalimido]-4(3H)-quinazolinone, Vijay H. Patel, Manish P. Patel, (Miss) Ranjan G. Patel, *J. Serb. Chem. Soc.*, **67** (11), 719-726 (2002). [**I. F.- 0.934**]
123. Monoazo disperse dyes derived from 11H-7-amino-2-chloro-isoindolo[2,1-a]benzimidazole-11-one, Kalpesh M. Patel, Vijay H. Patel, Manish P. Patel and Ranjan G. Patel, *Dyes and Pigments*, **55** (1), 53-58 (2002). [**I. F.- 3.532**]
124. Glass fiber reinforced composites of coloured epoxy resin cured with different amines, Milan R. Patel, Manish P. Patel, Rashmika H. Patel, Ranjan G. Patel, *Polymer and Polymer Composites*, **10** (6), 441-446 (2002). [**I. F.- 0.31**]
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126. Synthesis and application of heterocyclic dyes based on 11-Amino-3-bromo-13H-acenaphtho[1,2-e]pyridazino[3,2-b]quinazolin-13-one, Vijay H. Patel, Manish P. Patel, (Miss) Ranjan G. Patel, *Heterocyclic Communications*, **7**, 599-606 (2001). [**I. F.- 0.522**]
127. Synthesis and studies of coloured polyesters derived from bis-azo diols, K. J. Patel, M. P. Patel and R. G. Patel, *Indian Journal of Chemical Technology*, **7**, 307-311 (2000). [**I. F.- 0.628**]
128. Synthesis and characterization of novel polyester/copolyester, Manish P. Patel and Ranjan G. Patel, *J. of Polymeric Materials*, **16**, 237-242 (1999).
129. Studies on the kinetics of curing and thermal stability of novel tetrafunctional epoxy resin and their glass fiber-reinforced composites, Kamlesh G. Amin, Manish P. Patel and Ranjan G. Patel, POLYMER '99 'Polymers Beyond AD 2000', Ed: A. K. Ghosh, The Society of Polymer Science, India, 538-531 (1999).

130. Studies on the curing kinetics and thermal stability of the novel tetrafunctional epoxy resin, 4-N,N,N',N'-tetrakis(2,3-epoxypropyl)-4,4'-(1,4-phenylenedioxy)-dianiline, Kamlesh G. Amin, Manish P. Patel & Ranjan G. Patel *Die Angewandte Makromolekulare Chemie*, **266**, 46-49 (1999).
131. Novel bis-azodiols: utilization in coloured polyesters, B.J. Modi, M.P. Patel, (Miss) R.G. Patel and V.S. Patel. *Colourage*, Vol. **XLV (2)**, 23-28 (1998).
132. Synthesis and characterization of thermotropic liquid crystalline copolyesters, M.P. Patel, (Miss) R.G. Patel and V.S. Patel, *International Journal of Polymeric Materials*, **42**, 209-217 (1998). [**I. F.- 1.83**]
133. Studies of the novel water soluble coloured polyesters containing an azo moiety, M. P. Patel, B.J. Modi, (Miss) R.G. Patel and V.S. Patel *J. Appl. Polym. Sci.*, **68**, 2041-2048 (1998). [**I. F.- 1.401**]
134. Synthesis and characterization of novel poly(aryl-ether-ketone)s, Miss R. G. Patel, M.P. Patel, V.S. Patel and B.B. Mistry. 'Polymers Synthesis and characterizations' Ed: Paramjit Singh, Allied Publishers Limited, New Delhi, 74-82 (1997).
135. Synthesis and characterization of polymeric dyes, K.H. Shah, M. P. Patal, K.G. Amin, (Miss) R.G. Patel and V.S. Patel, *Acta Ciencia Indica*, Vol **XXIII C(4)**, 177 (1997).
136. Heterocyclic monoazo disperse dyes derived from 2,2'-methylene bis-(3H)-quinazoline for dyeing nylon, polyester and cellulose triacetate fibres, B.B. Mistry, M. P. Patel, N.B. Patel, (Miss) R.G. Patel and V.S. Patel, *Acta Ciencia Indica*, Vol. **XXIII C(2)**, 79 (1997).
137. Synthesis and characterization of bisazo diols and their utilization in coloured polyesters, M. P. Patel, B.J. Modi, (Miss) R.G. Patel and V.S. Patel, *Indian J. Fibre and Text. Res.*, **22**, 202-209 (1997). [**I. F.- 0.486**]

**APPENDIX – II****Ph.D. STUDENT GUIDED**

<b>Name Of Students</b>	<b>Title of the Thesis</b>	<b>Ph.D. Award Year</b>
1. Ritesh G. Patel	Synthesis and evaluation of new chromogenic fluoran compounds.	Aug. 2004
2. Jignesh V. Patel	Studies of hydrogels and some heterocycles for drug release and chromogenic materials.	June 2005
3. Sachin V. Patel	Synthesis of heterocyclic compounds based on spiro[isobenzofuran-1,9'-xanthen]-3-one and utilization for reversible thermochromic materials	Dec 2005
4. Sanjay F. Thakor*	Synthesis, characterization, application and antibacterial activity of heterocyclic dyes.	July. 2005
5. Rohit D. Patel	Some novel quinoline and quinazolinone compounds: Their synthesis, characterization and biological studies.	May 2006
6. Nilav A. Patel*	Some new quinoline acridine and thiazolo quinazolinone compounds: Their synthesis characterization and biological studies.	May 2007
7. Sandip V. Bhuvra	Synthesis and characterization of new heterocyclic compounds and their <i>in vitro</i> pharmacological studies.	March 2010
8. Nilesh J. Thumar	Some new derivatives of chromene, pyran, quinoline and thiazole: Their synthesis, characterization and evaluation as antimicrobials.	Dec 2010
9. Ankit M. Patel*	New ionic superabsorbent hydrogels: Synthesis, characterization and evaluation for their potent applications.	Dec 2010
10. Pushpak M. Shah	Synthesis and medical application of new heterocyclic compounds.	Oct 2011
11. Harshad G. Kathrotiya	Synthesis and biological evaluation of new 2-phenyl indole and 2-aryloxyquinoline based heterocycles.	Dec 2013
12. Yatin N. Patel	Studies of new ionic superabsorbent hydrogels for removal of dyes and heavy metals from aqueous solution.	Jan 2014
13. Hardik H. Jardosh	Synthesis, characterization and biological exploration of diverse heterocycles library of <i>N</i> -allyl quinolone.	Feb 2014
14. Mehul B. Kanani	Synthesis and biological evaluation of new quinoline based diverse heterocycles.	Dec 2014
15. Viransinh P. Mahida	Superabsorbent nanohydrogels: Their synthesis, characterization and Evaluation for removal of toxic metals and dyes from wastewater.	Sep 2015

16. Nileash D. Vala	Synthesis, characterization and biological Exploration of some new derivatives based on <i>1H</i> -Pyrazole and <i>N</i> -Allyl Quinolone	Sep 2016
17. Gaurav G. Ladani	Novel heterocyclic derivatives bearing quinoline nucleus: Synthesis, Characterization and pharmacological evaluation.	Oct 2016
18. Jayvirsinh D. Gohil	Studies in synthesis and characterization of some novel pharmacologically active compounds bearing quinoline nucleus.	Sep 2017
19. Haresh B. Patel	Design, synthesis and biological exploration of pyrazole and benzothiazole bearing heterocyclic compounds.	Oct 2017
20. Ankit J. Patel	Synthesis and characterization of new biologically Active compounds bearing quinoline scaffold.	Sep 2018
21. Pratibha Prasad	Synthesis of new <i>N</i> -substituted indole and 5-substituted pyrazole derivatives and their biological exploration.	Jan 2020
22. Pratik G. Shobhasana	Design of new heterocyclic compounds and their evaluation for potential pharmacological activity.	June 2020
23. Shitalben R. Patel	Design, Synthesis and Characterization of Magnetic Fe <sub>3</sub> O <sub>4</sub> -Chitosan based Polymer Composite Hydrogels as Potential Components for Dye Removal Application	Dec. 2021
24. Anirudhdha G. Kalola	Studies on Copper Catalysed Hydrogenation Under Surrogacy of Sodium Borohydride.	July. 2023
25. Jaydeep A. Mokariya	Synthesis, Characterization of Substituted Triazole, Pyrazole, Pyrimidine, and 1,3-Diyne Bearing Scaffolds and Their Biological Evaluation	Sep. 2023

**Ph.D Students working at present:**

<i>Name of Student</i>	<i>Topic of Research</i>	<i>Year of Registration</i>
1. Roshni D. Hingrajiya	Synthesis and characterization of derived heterocyclic compounds and their potent pharmaceutical applications.	Synopsis Submitted
2. Reenaben C. Patel	Design, Synthesis, Characterization and Pharmaceutical Evaluation of heterocycle based compounds.	Synopsis Submitted
3. Vishal Rana	Calix-arene based smart chemical materials.	From 2022
4. Mithilkumar H. Trivedi	Synthesis and characterization of polysaccharide based hydrogel and their advance applications.	From 2023
5. Kaushal B Parmar	Design, synthesis and pharmacologically important Nitrogen bearing heterocyclic compounds.	From 2023

\* Jointly with Prof. Dr. (Miss) R. G. Patel.

**RESEARCH PROJECTS CARRIED OUT**

1. UGC, New Delhi: “Studies of New Superabsorbent Nano Materials for Removal of Toxic metals and Dyes from Industrial Wastewater” from 01-02-2011 to 31-01-2014 [Rs. 7,01,600/-].
2. UGC, New Delhi: “Structure based Design of Novel Heterocyclic compounds: Synthesis, SAR and Pharmacological Studies” from 01-05-2006 to 30-04-2009 [Rs. 5,12,600/-].
3. DST, New Delhi: "Novel Side Armed Polymers as Dispersing/ Wetting Agents for Resin Minimal Pigment Concentrates-Tailoring and Evaluation", [Co-Investigator) from 01-04-2003 to 31-08-2006 [Rs. 11,90,460/-].
4. “Study on Colour stability of Piperazine (Anhy) and Diethylene amines”, funding by Diamine and Chemicals Ltd., Vadodara, India (Co-Investigator) from 01-01-2004 to 31-12-2004 [Rs. 99,000/-].
5. UGC, New Delhi : "Synthesis and Characterization of Leuco dyes and their Evaluation for Thermo and Pressure Sensitive Materials” from 01-01-2002 to 31-12-2004 [Rs. 2,61,360/-].
6. UGC, New Delhi: “Synthesis, Characterization & Application of Novel Coloured Epoxy Resins” (Co-Investigator) from 1-10-1998 to 31-09-2001 [ Rs. 3,09,815/-].
7. UGC, New Delhi: "Synthesis, characterization and kinetics studies of some novel O-diglycidyl epoxy resins" from 1-10-1999 to 31-03-2000 [Rs. 10,000/-].

**REVIEW ARTICLE/ CHAPTER PUBLISHED IN BOOK:**

1. "Flame retardant polyester resins", Chapter – 8, Vol. 1, pp.333-364, 2002 "Handbook of Polymer Composites and Blends", Published by RAPRA Technology, Limited, UK. (V.S. Patel, R.G. Patel and M.P. Patel).
2. Removal of Cr (VI) from aqueous solution by super absorbent poly( N,N DAPB/N,N-DMAAM/PNAAC] Hydrogels”, YATIN N. PATEL and MANISH P. PATEL Chapter – 12, In “MICRO- AND NANOSTRUCTURED POLYMER SYSTEMS From Synthesis to Applications”, CRC Press and Apple Academic Press products, USA. 1, pp.165-184, 2015



**AWARDS:**

- Hari Ohm Ashram Award for Best Research Paper:
1. Studies of the Novel Water Soluble Coloured Polyesters Containing an Azo Moiety  
M.P. Patel, B.J. Modi, (Miss) R.G. Patel and V.S. Patel  
*J. Appl. Polym. Sci.*, **68**, 2041-2048 (1998).
  2. Synthesis and Characterization of Thermotropic Liquid Crystalline Copolyesters,  
M.P. Patel, (Miss) R.G. Patel and V.S. Patel  
*Int. J. Polym. Mater.*, **42**, 209-217 (1998).
  3. Synthesis and Characterization of Bisazo diols and their Utilization in Coloured Polyesters,  
M.P. Patel, B.J. Modi, (Miss) R.G. Patel and V.S. Patel,  
*Indian J. Fibre & Text. Res.*, **22**, 202-209 (1997).
  4. Synthesis and Studies of Coloured Polyesters derived from bis-azo diols”,  
K.J. Patel, M.P. Patel and R.G. Patel  
*Indian Journal of Chemical Technology*, **7**, 307-311 (2000).
- 2<sup>nd</sup> Prize has been awarded for the research paper entitled “Synthesis, characterization and application of novel antifungal heterocyclic monoazo acid dyes” presented at “National Symposium on “New Trends in Synthetic Organic Chemistry” held at Hotel Taj Residency by K.T.H.M. College, Nashik (Maharashtra) during July 7-8, 2002.
- 3<sup>rd</sup> Prize has been awarded for the research paper entitled “Swelling and dye adsorption study of new cationic poly [AAm/DAMB/ DADMAC] hydrogels” presented at “National Seminar on Novel trends in Polymer Science and Technology” held at Department of Chemistry Sardar Patel University, Vallabh Vidyanagar during 8<sup>th</sup> & 9<sup>th</sup> March 2007.
- 1<sup>st</sup> prize has been awarded for the research paper entitled “Synthesis, characterization and application of colorimetric sensor hydrogels for the detection of ferric ion in aqueous media”, presented at National Seminar on Applied Polymer Science and Technology (NSAPST-2020) held at Department of Chemistry, Sardar Patel University, Vallabh Vidyanagar during 28-29 January 2020.
- Honored “**SHIKSHA RATTAN PURASKAR**” by India International Friendship Society, New Delhi on 21-01-2011.

## **Invited Talks and other information (2015-2016):**

- ✚ Invited talk on “*A novel approach for the synthesis of hydrogel nanoparticles and its removal study of reactive dyes from industrial effluent*” delivered in International conference on “Advancements in Polymer Science & Technology” (APA-2015) held at Department of Chemistry, Saurashtra University, Rajkot during October 29-31, 2015.
- ✚ Invited talk on “*Smart Materials: Superabsorbent Hydrogels for Specialty Applications*” delivered in the National level conference on “Recent Development in Chemical Sciences” (RDCS-2015) sponsored by B.C.U.D., S. P. Pune University, Pune at Radhabai Kale Mahila Mahavidyalaya, Ahmednagar (Maharashtra) during 22<sup>nd</sup> and 23<sup>rd</sup> December, 2015.
- ✚ One of the organizing committee members of (1) Conference on “Advancements in Polymer Science & Technology” (APA-2015) held at Department of Chemistry, Saurashtra University, Rajkot during October 29-31, 2015 (2) the National level conference on “Recent Development in Chemical Sciences” (RDCS-2015) sponsored by B.C.U.D., S. P. Pune University, Pune at Radhabai Kale Mahila Mahavidyalaya, Ahmednagar (Maharashtra) during 22<sup>nd</sup> and 23<sup>rd</sup> December, 2015 (3) UGC Sponsored two days workshop on Characterization techniques for Materials (CTM-2016) held Department of Material Science, Sardar Patel University, Vallabh Vidyanagar-388120.
- ✚ Act as Organizing Secretary in UGC-CAS sponsored National Conference on “Emerging Trends and Advances in Chemical Sciences” (ETACS-2015) on 8-9/10/2015 at Department of Chemistry, Sardar Patel University, V.V. Nagar and National seminar on ‘Innovations and Emerging Dimensions in Chemical Science Research (IEDCSR-2016) on 20/02/2016 at Department of Chemistry, Sardar Patel University, V.V. Nagar.
- ✚ Act as Session Chairman in UGC Sponsored National Seminar on Chemical Sciences in Present Scenario (CSIPS-2016) organized by Chemistry and Industrial Chemistry Departments of V.P. & R.P.T.P. Science College, Vallabh Vidyanagar on 8-9<sup>th</sup> January, 2016.