

## Mayuri Gandhi

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### **Preset Employer**

**Centre for Research in Nano Technology & Science (CRNTS)**

**Sophisticated Analytical Instrument Facility (SAIF), Indian Institute of Technology (IIT), Mumbai, - 400076, INDIA**

*Designation: Research Scientist*

Duration: Oct 1984 – Till Date

### **Education**

Indian Institute of Technology (IIT), Bombay, INDIA

*Doctorate of Philosophy (Ph.D.)* in Analytical Chemistry, Dec 1988 – Feb 1992

Topic of Thesis: Separation of Toxic Metal Pollutants from Environment by Extraction with Cryptands.

CPI: 8.3/10

Mumbai University, Mumbai, INDIA

*Master of Science (M.Sc.)* in Organic Chemistry, Jun 1980 – Jun 1982

Percentage: 64%

Mumbai University, Mumbai, INDIA

*Bachelor of Science (B.Sc.)* in Chemistry, Jun 1977 – Jun 1980

Percentage: 67%

### **Instrumentation Skills and Experience**

Experience in working with many sophisticated instruments like High resolution Liquid Chromatography Mass Spectrometer (HRLCMSMS), QTOF and ORBITRAP, 600 MHz Nuclear Magnetic Resonance (NMR), Gas Chromatography Mass Spectrometer (GCMS), Laser Ablation Inductively coupled plasma Mass Spectrometer (LA-ICP-MS), Inductively Coupled Plasma Atomic Emission (ICP-AES), Fourier Transform Infrared Spectrometer-Imaging (FT-IR & FTIR Imaging), Nanosecond Fluorescence Spectrometer (NSFS), Electron Spin Resonance Spectrometer (ESR), Laser Raman Spectrometer (LRS), Ultra violet- Visible Spectrometer (UV-VIS). Many Industrial & academic problems are taken & consultations are also provided for these instruments especially LCMSMS, EPR, 600 MHz NMR & HR-GCMS, FTIR Imaging. The Instruments like TEM, FEG-SEM, CryoTEM, HR-TEM, SIMS, LA-ICPMS are also learned.

As I had training trice on Mass spectrometry in USA(2007, 2013 & 2017) & on 600 MHz NMR in Japan (2017). I have vast experience with Mass spectrometry, NMR & ICP-MS. I solve many chemistry related industrial problems with these instruments. I have exposure of varieties of samples on Mass & NMR. We give consultation to industries for interpreting the spectra of Mass & NMR. I have both hands on & interpretation experience in Mass &

<sup>1</sup>H NMR & multinuclear NMR i.e 2D NMR COSY, TOCSY, HSQC and HMBC, NOESY and ROESY

### Professional Training

- Varian Inc & Agilent Technologies, Chicago, USA for Mass Spectrometer and its applications in Sept 2007 and March 2013
- Jeol 600 MHz. Training in Tokyo Japan in November 2017
- Thermo Scientific

### Research Experience:

**Research Area:** Synthesis & characterisation of Quantum dots(QDs), NIR Nanophosphors, Upconverting Nanophosphors, Mesoporous hydroxyapatite, Scintillators & multimodal nanomaterials for different applications such as labels for protein, Optical Imaging, Drug delivery, biosensors, Nuclear scintillators, Quantum cutting material for solar cells etc. Mass spectrometry for quantification & biomarkers for protein from cancer

- **Guided student for M.Tech.**

**Co-Guide for M.Tech.** Student Sudipta sadhu with Prof.Sanjeev Srivastava of Biosciences and BioEngineering, (2013)

Title: Developing new labels for protein Microarrays using Nanophosphors

- **Guiding Ph.D. Students**

Student	Dept	Guide	Coguide
1. Adersh Asok	CRNTS	Ajit Kulkarni, MEMS	Mayuri Gandhi, CRNTS
2. Pramod Napoothari	CRNTS	Ajit Kulkarni, MEMS	Mayuri Gandhi, CRNTS
3. Uddipta Chatterjee	Electrical	Siddharth Dattgupta, EE	Mayuri Gandhi, CRNTS
4. Neha Agrawal	CRNTS- Ext DRDO	Aroop Bhattacharya, MEMS	Mayuri Gandhi, CRNTS, Kingsukh, DRDO Kanpur
5. Santosh Arali	CRNTS	Somuyo Mukherjee, BSBE	Mayuri Gandhi, CRNTS
6. Shital Agrawal	CRNTS	Ajit Kulkarni, MEMS	Mayuri Gandhi, CRNTS
7. Nikita Ghoi	CRNTS	Sanjeev Srivastava, BSBE	Mayuri Gandhi, CRNTS
8. Manali Jadhav	CRNTS	Sanjeev Srivastava, BSBE	Mayuri Gandhi, CRNTS
9. Vishvesh Awasthi	CRNTS	Rajdeep Bandopadyay, Chemical Eng	Mayuri Gandhi, CRNTS
10. Roly Kaushik	CRNTS	Rajdeep Bandopadyay, Chemical Eng	Mayuri Gandhi, CRNTS
11. Barkha Singh	CRNTS	Rohit Srivastava, BSBE	Mayuri Gandhi, CRNTS
12. Saicharan	CRNTS	Sanjeev Srivastava, BSBE	Mayuri Gandhi, CRNTS

13.	Abhilash	CRNTS	Sanjeev Srivastava,BSBE	Mayuri Gandhi, CRNTS
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- **Completed Research Project as PI**

SI No.	Title of Project	Funding Agency	Amount	Date of completion
1.	Synthesis & charecterisation of NANOPHOSPHORS for strategic applications'	DRDO	35,30,200/-	16/04/2010 To16/04/2013

- **Patent Filed**

1. A. Das, S. P. Duttgupta and M. N. Gandhi, "Schottky junction diode based thermal neutron detector" Indian patent No 3736/MUM/2013

2. A. Bhoutekar, A. Das, M. N. Gandhi and S. P. Duttgupta, "Solvothormal derived Europium doped ZnOnano-particle synthesize for scintillator based detector application", Indian patent No 3779/MUM/2014.

3. A.Das, A. Bhoutekar,M. N. Gandhi and S. P. Duttgupta "Top down approach to fabricate nano-scintillator based charged particle detector" In process

4 A. Asok, A. R. Kulkarni and M. N. Gandhi.

A method for synthesising defect rich nanocrystals of variable size with enhanced defect luminescence, Patent of Addition (Application Part) Multifunctional activeingredient in cosmetic/UVA,B andC protection, IPO 3713/MUM/2013, Filed November 26, 2013.

5 Sanjeeva Srivastava, Manali Jadhav, Swati Kumar, Monalisha Nayak, Mayuri Nalinkumar Gandhi Of Indian Institute of Technology Bombay, Department of Biosciences and Bioengineering, Powai, Mumbai-400076, Maharashtra, India; And Arunansu Talukdar of Medical College Hospital, Medical Department, 88 College Street Kolkata 700073All Indian Nationals

Confirmed on 29 May 2018, Patent Application No. 201721018611

TITLE OF THE INVENTION: HOST BIOMARKERS TO ASSESS PROGRESSION FROM DF TO DHF AND METHODS THEREOF

6 A. Asok, A. R. Kulkarni and M. N. Gandhi.

Indian Patent Application No. 3713/MUM/2013 (Accepted)

Title: "A METHOD FOR SYNTHESISING DEFECT RICH NANOCRYSTALS OF VARIABLE SIZE WITH ENHANCED DEFECT LUMINESCENCE" Indian Filing date: November 26th, 2013

Patent No.: 312101, Due Date: August 1st, 2019

- **List of Articles authored in Encyclopedia of Analytical Science, Academic Press, London (1995).**

1. Qualitative Analysis
2. Thallium
3. Gallium
4. Silicon and its compound
5. Organic analysis with UV-VIS
6. Water determination
7. Ion exchange in Paper Chromatography
8. Sulphur dioxide (SO<sub>2</sub>)
9. Nitrogen oxides (NO-NO<sub>x</sub>)

- **Publication in Journal (158 Citations)**

1. Multi pronged proteomic analysis to study the glioma pathobiology using cerebral fluid samples. In Proteomics Clinical Applications(PMID: 28679024) 2017  
Gahoi N, Malhotra D. , Moiyadi A, Verma SG, **Gandhi MN**, Srivastava S. ,
2. Clinical Proteomics and Cytokine Profiling for Dengue Fever Disease Severity Biomarkers  
Manali Jadhav, Monalisha Nayak, Swati Kumar, Apoorva Venkatesh, Sandip K. Patel, Vipin Kumar, Sarthak Sharma, Bious Samanta, Satarupa Deb, Avik Karak, Sumit Verma, Arunansu Talukdar, Sanjay K. Kochar, Preeti Mansukhani, **Mayuri Gandhi**, and Sanjeeva Srivastava Published Online: 1 Nov 2017 <https://doi.org/10.1089/omi.2017.0135>
3. "Real-time iTRAQ-based proteome profiling revealed the central metabolism involved in nitrogen starvation induced lipid accumulation in microalgae." by Vineeta Rai, Muthusivaramapandian Muthuraj, **Mayuri Gandhi**, Debasish Das, and Sanjeeva Srivastava [Paper #SREP-16-37452], Scientific Report **2017 (Accepted)**
4. *Salvianolic acid inspired Stryl-cinnamate analogue targets rat glioma by targeting translation-cell proliferation as well as apoptotic pathways-multiple pathways-pot purrie of pathways as dictated by proteomics* . Kiran Rawat, Amit Shard, Manali Jadhav, Arun K. Sinha, **Mayuri Gandhi**, Rituraj Purohit, Yogendra Padwad(**Communicated(2017)**)
5. Size controlled etching of ZnO quantum dots using Cu<sup>2+</sup> ions and its potential for Cu<sup>2+</sup> sensing. A. Asok, N. Marle, **M. N. Gandhi** and A. R. Kulkarni,(Communicated) **2017**.
6. Elucidating the stabilizing effect of oleic acid coated LaF<sub>3</sub>: Nd<sup>3+</sup> nanoparticle surface in the thermal degradation of PMMA nanocomposites, pramod K, **Mayuri N Gandhi**, Ajit Kuljarni, Materials Chemistry and Physics 190 , 45-52, **2017**
7. Plastic deformation and corrosion in austenitic stainless steel:A novel approach through micro texture and infra red spectroscopy, N. Srinivasan , V. Kain , N. Birbilis , B.Sunil Kumar

- M.N. Gandhi** , P.V. Sivaprasad, G. Chai, A. Lodh, P.M. Ahmedabadi, I. Samajdar , Corrosion Science, 111,404-413, **2016**
8. Clinicopathological Analysis and Multipronged Quantitative Proteomics Reveal Oxidative Stress and Cytoskeletal Proteins as Possible Markers for Severe Vivax Malaria. Ray S, Patel SK, Venkatesh A, Bhavne A, Kumar V, Singh V, Chatterjee G, Shah VG, Sharma S, Renu D, Nafis N, Gandhe P, Gogtay N, Thatte U, Sehgal K, Verma S, Karak A, Khanra D, Talukdar A, Kochar SK, S B V, Kochar DK, Rohh D, Varma SG, **Gandhi MN**, Srikanth R, Patankar S, S Srivastava S.Sci Rep. **2016** Apr 19;6:24557. doi: 10.1038/srep24557. PMID: 27090372
  9. Surfactant free novel one-minute microwave synthesis, characterization and cell toxicity study of mesoporous strontium hydroxyapatite nanorods, Shital Agrawal, Madhura Kelkar, Abhijit De, **Mayuri Gandhi**, Ajit Kulkarni, RSC advance, 6, 94921-94926, **2016**.
  10. Proteomic analysis of elicitation of downy mildew disease resistance in pearl millet by seed priming with  $\beta$ -aminobutyric acid and *Pseudomonas fluorescens*. Anup CP, Melvin P, Shilpa N, **Gandhi MN**, Jadhav M, Ali H, Kini KR. ,J Proteomics. **2015** Apr 29;120:58-74. doi: 10.1016/j.jprot.2015.02.013. Epub 2015 Mar 3. PMID:25746381
  11. Targeted Proteomics Workshop and International Symposium (IIT Bombay, Mumbai, India): An Accelerator for Global Proteomics. Atak A, Mehta K, Rao A, Gollapalli K, Manubhai KP, **Gandhi M**, Nayak M, Gahoi N, Reddy PJ, Jain R, Ghantasala S, Gupta S, Mukherjee S, Pillai T, Singh VA, Mani VA, Pandey V, Srivastava S.OMICS. **2016** Apr;20(4):199-201. doi: 10.1089/omi.2016.0037. PMID: 27093106
  12. Lanthanide-Doped Nanophosphor labels for Protein Microarrays, Sudipata sadhu, **Mayuri Gandhi**, Sanjeeva Srivastava, Current Pharmacogenomics and Personalized Medicine, **2015**,13, 51-60
  13. Surface defect-rich ZnO quantum dots as antioxidant inhibiting  $\alpha$ -amylase and  $\alpha$ -glucosidase: A potential antidiabetic nanomedicine, A. Asok, S. Ghosh, P.A More, **M. N. Gandhi**, B. A. Chopade and A. R. Kulkarni. *J. Mater. Chem. B*, **2015**, 3, 4597-4606. Impact Factor: 4.879
  14. Defect-rich ZnO quantum dots as a potential multifunctional sunscreen and cosmetic active ingredient, A. Asok, A. R. Kulkarni and **M. N. Gandhi**, *Pure Appl. Chem.*, IUPAC, **2015**, 87(9-10), 971-977. Impact Factor: 3.386
  15. Effect of surface grafting coefficient and chain length of fatty acids on the luminescence of Neodymium<sup>3+</sup> doped LaF<sub>3</sub> nanoparticles, Pramod K., **Mayuri Gandhi**, Ajit Kulkarni, Journal of Material Chemistry, **2015**, 3, 1817-1822
  16. White Light Emission Through Downconversion of Terbium and Europium Doped CeF<sub>3</sub> Nanophosphors, Varun S, Mohit Kalra, **Mayuri Gandhi**, Journal of Fluorescence 25(5) ,**2015**
  17. Defect rich seed mediated growth: A novel synthesis method to enhance defect emission in nanocrystals, A. Asok, A. R. Kulkarni and **M. N. Gandhi**, *Journal of Materials Chemistry C*, **2014**, 2, 1691-1697. Impact Factor: 5.076
  18. 15. Synthesis of ZnSe Quantum Dots with Stoichiometric Ratio Difference and Study of its Optoelectronic Property,Uzma Menon, U.Chaterjee, **Mayuri Gandhi**, S.Tiwari, S. duttagupa Procedia Materials Science 5 ( **2014** ) 1027 – 1033
  19. A. Das, U. Chatterjee, S. P. Duttagupta and **M. N. Gandhi**, "Study of gamma irradiation

20. effect on sol-gel derived lithium borate glassy film based metal insulator semiconductor structure" *Journal of Electron Devices*, Vol. 20, **2014**, pp. 1729-1732.
21. U Chatterjee, A Das, T Ghosh, SP Duttagupta, **MN Gandhi**, and SG Singh, "Effect of Post Deposition Annealing on Thermal Evaporated ZnSe:Te towards a Scintillator Application," *Microelectronic Engineering*, Vol 126 (**2014**) 84–87
22. Synthesis and characterization of NIR Luminescent LaF<sub>3</sub>:Ln<sup>3+</sup> nanoparticles and their transparent Epoxy Nanocomposites", Pramod Nampoothari, **Mayuri Gandhi**, Ajit Kulkarni, *Advanced Materials Research Journal*, 748, (**2013**) 101-105
23. Microwave accelerated one-minute synthesis of luminescent ZnO quantum dots, **A. Asok**, A. R. Kulkarni and **M. N. Gandhi**, *AIP Conf. Proc.*, **2013**, 1512, 404-405.
24. Quantum Cutting down Conversion by Cooperative Energy Transfer from Tb<sup>3+</sup> to Yb<sup>3+</sup> in CeF<sub>3</sub> Nanophosphors **M Gandhi**, N Agrawal, H Bhatia, *Advanced Materials Research*, 860, 124-127(**2013**)
25. Enhanced visible photoluminescence in ZnO quantum dots by promotion of oxygen vacancy formation, A. Asok, M.N. Gandhi, A. R. Kulkarni, *Nanoscale*, **2012** Aug 21;4(16):4943-6. Impact Factor: 7.92
26. Nayan Agrawal, Harshita Bhatia, Mayuri Gandhi, Fluorescence study of CeF<sub>3</sub> with RE dopents in NIR, *Journal of Fluorescence*, (Communicated)
27. Nayan Agrawal, Harshita Bhatia, Mayuri Gandhi, Quantum cutting CeF<sub>3</sub> with Samarium in visible & Near Infrared for solar, , *applied Nano Science*,(Communicated)
28. M.N.Gandhi and S.M.Khopkar, (1995), Review on Crown Ether and Cryptand. *Ind.Sci.and Res.*, 54, 345.
29. M.N.Gandhi and S.M.Khopkar, (1994), Ion Chromatography in Environmental Analysis, *Ind.J.Env.Prot.*, 4, 256.
30. S.M.Khopkar and M.N.Gandhi, (1994), Calixarenes- New Complexing ligands for Metal ion Separations, *IANCAS Bulletin*,10, 20.
31. M.N.Gandhi and S.M.Khopkar, (1994), International Solvent Extraction Conference'93, *J.Sci. and Ind.Res.* 53, 630.
32. M.N.Gandhi and S.M.Khopkar, (1993), Liquid Liquid Extraction of Nickel (II) with Cryptand 222 and erythrosin as the counter ion, *Chemical and Environment Research*, 1, 389.
33. M.N.Gandhi, N.V.Deorkar and S.M.Khopkar, (1993), Solvent Extraction Separation of Cobalt and Nickel with Cyanex 272, *Talanta*, 40, 1535.
34. M.N.Gandhi and S.M.Khopkar, (1993), Liquid Liquid Extraction of Copper (II) with Cryptand 222 with Erythrosin as Counterion, *Mikrochim Acta*, 111, 93.
35. M.N.Gandhi and S.M.Khopkar, (1992), A Macrobicyclic polyether for the extractive separation of Cadmium, *Chemica. Anal. (Warsaw)*, 37, 437.
36. M.N.Gandhi and S.M.Khopkar, (1992), Rapid Method for the concentration extractive separation of Manganese (II) from aquatic environment at tracer concentration, *Anal.Sci.* 8, 65.
37. M.N.Gandhi and S.M.Khopkar, (1992), Solvent extraction Separation of Thallium (I) with Cryptand 222 and Erythrosin, *Anal.Chim.Acta*, 270, 87.
38. M.N.Gandhi and S.M.Khopkar, (1992), Cryptand macrobicyclic polyethers as the extractants, *J.Chem.Science.* 8, 111.

40. S.Chcrian, M.N.Gandhi and S.M.Khopkar, (1992), The Chemical Speciation Characterization and impact of metal pollutants on health from aerosols, *Ind.J.Env.Prot.* 12, 324.
41. M.N.Gandhi and S.M.Khopkar, (1991), Atomic absorption Spectrophotometric analysis of lead (II) by ion pair extraction with cryptand 222B and eosin, *Ind.J.Chem*30A, 706.
42. M.N.Gandhi and S.M.Khopkar, (1991), The Development of Water Pollution Monitoring Kit, *Ind.J.Env.Prot.* 11, 901
43. M.N.Gandhi and S.M.Khopkar, (1990), Water quality measurement and monitoring instruments, *Ind.J.Env.Prot.* 10, 262.
44. M.N.Gandhi and S.M.Khopkar, (1988), Spectrophotometric methods for determination of air pollutants, *Ind.J.Env.Prot.* 9, 5
45. M.N.Gandhi and S.M.Khopkar, (1988), Fluoride levels of drinking water from lakes in Bombay with ion analyser, *Ind.J.Env.Prot.* 8, 12.

- **Paper presented in International Conference**

1. 'Study of thin film (6Li, 10B based Lithium borate) grown by non-vacuum process on SiO<sub>2</sub>/Si for the use of thermal neutron detection', U. Chatterjee, A. Das, T. Ghosh, S.P. Dutttagupta, M.N. Gandhi, S.G.Singh, 'Effect of annealing on thermal evaporated ZnSe:Te towards a scintillator application for  $\alpha$ -particle radiation', NANOSMAT, Spain (2013)
2. Microwave assisted synthesis of Eu<sup>+3</sup> doped ZnO quantum dots A.Asok, A.R.Kulkarni, M.N.Gandhi, Material Research Society: Fall Meeting 2013, Boston, USA
3. Defectrich ZnO quantum dots as a potential multifunctional sunscreen and cosmetic active ingredient. A.Asok, A.R.Kulkarni, M.N. Gandhi, 16<sup>th</sup> International Congress on photo Biology-2014, Inivrsidad Nacional De Cardoba, Argentina.
4. Synthesis and characterization of NIR Luminescent LaF<sub>3</sub>:Ln<sup>3+</sup> nanoparticles and their transparent Epoxy Nanocomposites Pramod K Nampoothiri<sup>1,a</sup>, **Mayuri N Gandhi** and A.R. Kulkarni , Accepted for Oral Presentation in IMMCT, Seol, South Korea(2013)
5. U. Chatterjee, G. Sharma, A. Das, M. N. Gandhi, S. P. Dutttagupta, "A Semi-classical Modeling Study on Size Dependent Optical Properties of ZnSe Nanocrystals", 2nd International Conference on Electrical Engineering and Information & Communication Technology, Dhaka, Bangladesh, May 21- 23rd, 2015.
6. U. Chatterjee, A. Das, S. P. Dutttagupta, M. N. Gandhi, "Effect of Annealing on Thermal Evaporated ZnSe:Te towards a Scintillator Application", 8th International Conference on Surfaces, Coatings and Nanostructured Materials, Granada, Spain, September 22- 25th, 2013.
7. "Optical and Electrical Characterization of Cu<sub>2</sub>ZnSnS<sub>4</sub> thin films prepared by non-vacuum process for photo detector application", Uddipta Chatterjee, Siddhartha P. Dutttagupta, **Mayuri N. Gandhi**, 1st International Symposium on Physics and Technology of Sensors ( ISPTS 1)(2012)
8. "Study of photoluminescence and electrical properties of CZTS/ CZTSe thin films deposited by vacuum and non-vacuum process", Uddipta Chatterjee, Siddhartha P. Dutttagupta, **Mayuri N. Gandhi**, Nirav D. Vora, Isodiana Crupi, EMRS Strasbourg, Spring Meeting, (2012)
9. Processing of highly luminescent biocompatible quantum dot phosphors with tunable visible emission via defect and band gap engineering, Adersh Asok, Mayuri N. Gandhi, A.R. Kulkarni, International conference on Nonoscience and Technology (ICONSAT), ARCI, Hyderabad, India(2012)

10. Achintya Das, Siddhartha P. Duttagupta, Mayuri N.Gandhi, 'Tb doped ZnO Scintillator based thermal neutron detector', International Conference on Functional Material for Defense, Pune. (2012)
11. Achintya Das, Siddhartha P. Duttagupta, Mayuri N.Gandhi, 'TCAD, Compact Models for SiC Schottky Diode as Neutron Induced Ion Detector', International Conference on Electronics, Communication and Signal Processing, Nagpur [Best presentation Award](2012)
12. Mayuri Gandhi, Nayan Agrawal, Harshita Bhatia Paper  
Title: QUANTUM CUTTING DOWN CONVERSION BY COOPERATIVE ENERGY TRANSFER FROM Tb<sup>3+</sup> TO Yb<sup>3+</sup> IN CeF<sub>3</sub> NANOPHOSPHORS ,ICEED, China, Shanghai 2013
13. Mayuri Gandhi, Nayan Agrawal, Harshita Bhatia Paper  
Luminescence Study of Rare Earth Doped Cerium Fluoride-CeF<sub>3</sub> Nanophosphor ACCMES, Osaka, Japan, 2013
14. 'Macrobicyclic polyethers for the solvent extraction separation of copper manganese nickel and cadmium from aquatic environment' M.N. Gandhi and S.M.Khopkar International Solvent Extraction Conference'93, York United Kingdom (1993).
15. 'Solvent extraction separation of thallium with derivatives of crown ethers from other metals' M.N. Gandhi and S.M. Khopkar Third International Symposium on Analytical Chemistry in the Exploration Mining and Processing Materials' Johannesburg South Africa (1992).
16. 'Liquid liquid extraction of manganese (II) with cryptand 221 with erythrosin as counterion' M.N. Gandhi and S.M. Khopkar 2nd International Conference on Hydrometallurgy (ICHM 92) Changsha China (1992).
17. 'Separation of copper from aquatic environmental by solvent extraction with cryptand M.N. Gandhi and S.M. Khopkar 'Heavy metals in the environment' 8th International Conference Edinburgh United Kingdom (1991).
18. 'Liquid liquid extraction of copper (II) with cryptand 222 with erythrosin as counterion' M.N. Gandhi and S.M. Khopkar 4th Asian Chemical Congress Chinese Chemical Society Beijing, China (1991).
19. 'A rapid method for separation of Manganese(II) from aquatic environment at tracer concentration' M.N. Gandhi and S.M. Khopkar International Congress on Analytical Sciences 1991 (IUPAC ICAS'91) Chiba Japan (1991).
20. 'Solvent extraction of manganese with cryptand 221' M.N.Gandhi and S.M.Khopkar 27th Annual Convention of Chemists Culcatta (1991).
21. 'Solvent extraction separation of lead with cryptand 222B as an extractant' M.N. Gandhi and S.M. Khopkar 'International Trace Analysis Symposium' (ITAS) Kiryu Japan (1990).
22. 'A novel technique for separation of cadmium from industrial effluents' M.N. Gandhi and S.M Khopkar 'Environmental Contamination' 4th International Conference Barceloan Spain (1990).
23. 'Extraction of Copper with Calixarene' M.N.Gandhi International Solvent Extraction Conference'99 Barcelona Spain (1989).
24. 'Cryptand Macrobicyclic Polyethers as extractant' 27th Annual Convention of Chemists Gaya (1990).
25. 'Solvent extraction separation of lead with cryptand 222B' M.N. Gandhi and S.M. Khopkar 26th Annual Convention of Chemists Indore (1989).

26. 'Fluoride level of drinking water form lakes in Bombay' M.N. Gandhi and S.M. Khopkar  
6th ISAS National Symposium Shilong (1988).

- **International Conference attended and presented paper**

- (1) International Solvent Extraction Conference`93 (ISEC), York, United Kingdom in 1993  
Topic: Solvent Extraction Separation of lead, copper, manganese, cadmium with cryptand  
from Environment
- (2) ACCMES 7-9 November 2013, Osaka, Japan, and ECCED 12-13 November 2013,  
Shanghai, China were attended and presented papers.
- (3) Advanced Multifunctional materials 2017, Los Angeles, USA, 14-17 August 2017
- (4) Multifunctional Hybrid Nanomaterial 2019, Sitges, Spain 11-15 March 2019

Updated on 10 March 2019