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**Dr. Mayuri Gandhi**  
**Research Scientist,**  
**SAIF, IIT Bombay**

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**Preset Employer :**

Centre for Research in Nano Technology & Science(CRNTS)  
Sophisticated Analytical Instrument Facility (SAIF),  
Indian Institute of Technology Bombay (IITB), Powai, 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%

**Salary: 130400 Basic and level 12 A**

### **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), High Resolution Gas Chromatography Mass Spectrometer (GCHRMS), 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, 300 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 twice on Mass spectrometry in USA and in Japn for 600 MHz NMR & I 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 & 2D NMR & multinuclear NMR

### **Professional Training**

1. Varian Inc & Agilent Technologies, Chicago, USA for Mass Spectrometer and its applications in Sept 2007 and March 2013
2. Varian Inc & Agilent Technologies, Chicago, USA for Mass Spectrometer and its applications in March 2013
3. Thermo Fisher Scientific, USA for Orbitrap Mass spectrometer and application in proteomics in Miami, Florida, USA
4. Jeol, Japan, for 600 MHz. NMR training for solid and liquid state NMR and other 2D spectras like ROSY, COSY, HMBC, HMQC.

### **Professional Advisors:**

1. I was in advisor committee of Gujarat pollution control board for three years for purchasing sophisticated instruments and they have sent me to Japan in connection with instruments
2. I was in many purchase committees in IIT and outside SAIF and universities and CSIR lab such as ICAR Grapes, Pune, Bhavnagar CSMCRI, Nehru aluminium research Nagpur, SAIF Cochin, Pune university etc., for Purchasing NMR, Mass spectrometer, ICP MS etc.
3. I was advisor for changes in syllabus of Fisheries ICAR, Mumbai and Judje in competition of innovative ideas in Fisheries Tripura.

#### 4. Research collaboration with ACTREC, Kharghar, CIRCOT, Matunga.

### 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, therapeutic drugs for 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

#### Guiding 14 Ph.D. students on different topics related to Nanomaterial

Student	Dept	Guide	Coguide
1. Adersh Asok	CRNTS	Ajit Kulkarni, MEMS	Mayuri Gandhi, CRNTS
2. Pramod Napoothari	CRNTS	Mayuri Gandhi, CRNTS	Ajit Kulkarni, MEMS
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	Mayuri Gandhi, CRNTS	Ajit Kulkarni, MEMS
7. Nikita Ghoi	CRNTS	Sanjeev Srivastava, BSBE	Mayuri Gandhi, CRNTS

8. Manali Jadhav	CRNTS	Rohit Srivastava,BSBE	Mayuri Gandhi, CRNTS
9. Saichran	CRNTS	Sanjeev Srivastava,BSBE	Mayuri Gandhi, CRNTS
10. Abhilash Barpanda	CRNTS	Sanjeev Srivastava,BSBE	Mayuri Gandhi, CRNTS
11. Roly Kaushik	CRNTS	Rajdeep Bandopadhyay, Chemical Eng.	Mayuri Gandhi, CRNTS
12. Vishwesh Awasthi	CRNTS	Rajdeep Bandopadhyay, Chemical Eng	Mayuri Gandhi, CRNTS
13. Barkha Singh	CRNTS	Rohit Srivastava,BSBE	Mayuri Gandhi, CRNTS
14. Amreen Khan	CRNTS	Rohit Srivastava,BSBE	Mayuri Gandhi, CRNTS

- **Completed Research Project as PI**

Sl 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. Metabolomic Profiling for identifying key alterations in Meningioma Patients,Manali Jadhav, Mayuri Gandhi, Sanjeeva Srivastava, patent application no.202121011052
2. Host biomarker to acess progression from DF to DHF and methods thereof , Manali Jadhav, Mayuri Gandhi, Sanjeeva Srivastava, Patent application no. 201721018611
3. A. Das, S. P. Duttagupta and M. N. Gandhi, "Schottky junction diode based thermal neutron detector" Indian patent No 3736/MUM/2013
4. 2. A. Das, U. Chatterjee, S. P. Duttagupta and M. N. Gandhi, "Si based nanotemplate"  
In process

5. 3. A. Bhoutekar, A. Das, M. N. Gandhi and S. P. Duttagupta, "Solvothermal derived Europium doped ZnO nano-particle synthesis for scintillator based detector application", Indian patent No 3779/MUM/2014.
6. A. Das, A. Bhoutekar, M. N. Gandhi and S. P. Duttagupta "Top down approach to fabricate nano-scintillator based charged particle detector" In process
7. 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 active ingredient in cosmetic/UVA, B and C protection, IPO 3713/MUM/2013, Filed November 26, 2013.
8. Green synthesis of Pegylated-Tungsten Disulfide quantum dots\_ Barkha Singh, Rohan Bahadur, Mayuri Gandhi, Rohit Srivastava\_Indian patent application no.: 202021037515
9. Process for preparing fluorescent protein nanoparticles\_ Barkha Singh, Rohan Bahadur, Janhavi Devrukhkar, Mayuri Gandhi, Rohit Srivastava\_Indian patent application no: 202021026511
10. Novel synthesis of Titanium Carbide ( $Ti_3C_2$ -mxene) nanobipyramids by hydrothermal method\_ Barkha Singh, Rohan Bahadur, Mayuri Gandhi, Rohit Srivastava\_Indian patent application no: 202021018343
11. A microwave assisted hydrothermal method for synthesis of fluorescent carbon nanospheres\_ Barkha Singh, Rajendra Prasad, Janhavi Devrukhkar, Mayuri Gandhi, Deepak S. Chauhan, Akanksha Ninawe, Rohit Srivastava\_Indian patent application no: 202021047003
12. MXene composite nanosheet and method of preparing the same\_ Barkha Singha , Rohan Bahadur, , Mayuri Gandhi, Rohit Srivastava\_ Indian patent application no 202121023851

**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

1. Photo-Triggered Nanomaterials for Cancer Theranostic Applications, Amreen Khan, Nishant K. Jain, Mayuri Gandhi, Rajendra Prasad and Rohit Srivastava, Nano LIFE Vol. 11, No. 02, 2130004 (2021) **Review Paper**
2. Hydrothermal-Assisted Synthesis and Stability of Multifunctional MXene Nanobipyramids: Structural, Chemical, and Optical Evolution, Barkha Singh, Rohan Bahadur, Suditi Neekhra, Mayuri Gandhi, Rohit Srivastava\*, *ACS Appl. Mater. Interfaces* **2021**, 13, 2, 3011–3023, Doi:10.1021/acsami.0c18712
3. Influence of Surface States on the Optical and Cellular Property of Thermally Stable Red Emissive Graphitic Carbon Dots, Barkha Singh, Rohan Bahadur, Misah Rangara, Mayuri N. Gandhi, and Rohit Srivastava\*, *ACS Appl. Bio Mater.* **2021**, 4, 5, 4641–4651 [pubs.acs.org/doi/full/10.1021/acsabm.1c00379](https://pubs.acs.org/doi/full/10.1021/acsabm.1c00379)
4. Meenakshi Arya, Mayuri N. Gandhi, Nilesh Kulkarni, Shriganesh S Prabhu, Venu Gopal Achanta, Siddhartha P Duttgupta, "Structural and terahertz optical properties of Z-type ferrite, Ba<sub>3</sub>Zn<sub>1.8</sub>Co<sub>0.2</sub>Fe<sub>24</sub>O<sub>41</sub> under influence of calcination temperature for miniature antenna applications", *Materials Research Bulletin*, June **2021** (Under review).
5. Meenakshi Arya, Mayuri N. Gandhi, S. S. Prabhu, Venu Gopal Achanta, Siddhartha P Duttgupta, "Effect of Co substitution on the Structural, Terahertz and Magnetic characterization of NiZn ferrites", *Journal of Physics D: Applied Physics*, 54, 215002 (**2021**), pp. 10. doi: 10.1088/1361-6463/abe969.
6. On valorization of solvent extracts of Terminalia arjuna (arjuna) upon DNA scission and free radical scavenging improves coupling responses and cognitive functions under in vitro conditions, D. K. Meena, A. K. Sahoo, P. P. Srivastava, N. P. Sahu, M. Jadhav, M. Gandhi, H. S. Swain, S. Borah, B. K. Das, *Scientific Reports* volume 11, Article number: 10656 (**2021**), doi:10.1038/s41598-021-88710-w
7. Meenakshi Arya, Mayuri N. Gandhi, S. S. Prabhu, Venu Gopal Achanta, Siddhartha P Duttgupta, "Nickel-cobalt-zinc ferrite nanoparticles for radio frequency/terahertz frequency-selective surface application", *IET Nanodielectrics* (**2021**), pp. 1-9. doi:

10.1049/10.1049/nde2.12004.

8. Meenakshi Arya, Mayuri N. Gandhi, S. S. Prabhu, Venu Gopal Achanta, Siddhartha P Duttagupta, "Effect of Calcination temperature on Structural and Terahertz characterization of M-type Barium ferrite", *AIP Advances* 10, 105220 (2020), pp. 1052201-1052207. doi.org/10.1063/5.0026101.
9. Meenakshi Arya, Mayuri N. Gandhi, S. S. Prabhu, Venu Gopal Achanta, Siddhartha P Duttagupta, "Structural and Magnetic Properties of NiCoZn Ferrite", *Grenze International Journal of Engineering and Technology*, Vol. 6, Issue 1, (2020), pp. 50-53. Grenze ID: 01.GIJET.6.1.15, ISSN: 2395-5295.
10. Multi-omics analysis and systems biology integration identifies the roles of IL-9 in keratinocyte metabolic reprogramming, Soumitra Marathe, Bhavuk Dhamija, Sushant Kumar, Nikita Jain, Sarbari Ghosh, Jai Prakash Dharikar, Sumana Srinivasan, Sreya Das, Abhijeet Sawant, Saloni Desai, Farhat Khan, Abigail Syiemlieh, Manohar Munde, Chitra Nayak, Mayuri Gandhi, Ashutosh Kumar, Sanjeeva Srivastava, K V Venkatesh, Steven R Barthel, Rahul Purwar, *J Invest Dermatol*, 2021 Mar 3;S0022-202X(21)00237-2. doi: 10.1016/j.jid.2021.02.013.
11. Multiomics Analysis of Non-model Oleaginous Algae for Biodiesel and Phytochemical Production, Vineeta Rai, Sandip Kumar Patel, Muthusivaramapandian Muthuraj, Mayuri N. Gandhi, Debasish Das, and Sanjeeva Srivastava, *Biofuel Research Journal* 29 (2021) 1330-1341
12. A Protein Microarray-Based Investigation of Cerebrospinal Fluid Reveals Distinct Autoantibody Signature in Low and High-Grade Gliomas, Nikita Gahoi, Parvez Syed1, Saket Choudhary, Sridhar Epari, Aliasgar Moiyadi, Santosh G. Varma, Mayuri N. Gandhi and Sanjeeva Srivastava, *Front. Oncol.*, 22 December 2020 doi.org/10.3389/fonc.2020.543947
13. Proteomic insights into *Lysinibacillus* sp.-mediated biosolubilization of manganese Shreya Ghosh & Mayuri Gandhi, Eric D. van Hullebuscha and Alok Prasad Das, *Environmental Science and Pollution Research*, 2020 Oct 4. doi: 10.1007/s11356-020-10863-4.
14. Newly emerging mesoporous strontium hydroxyapatite nanorods: microwave synthesis and relevance as doxorubicin nanocarrier, *Journal of Nanoparticle Research* 20(9), 2018, DOI: 10.1007/s11051-018-4335-y, Shital Agrawa, Madhura Kelkar, Abhijit De, Mayuri Nalinkumar Gandhi, Ajit Kulkarni

15. Styryl-cinnamate hybrid inhibits glioma by alleviating translation, bioenergetics and other key cellular responses leading to apoptosis, *Experimental Cell Research*, Volume 375, Issue 1, **2019**, Pages 11-21, Kiran Rawat, Amit Shard, Manali Jadhav, Mayuri Gandhi, Prince Ananda, Rituraj Purohite, Yogendra Padwada, Arun K.Sinha, doi.org/10.1016/j.yexcr.2018.11.015
16. Multi-Pronged Proteomic Analysis to Study the Glioma Pathobiology using Cerebrospinal Fluid Samples, *PROTEOMICS - CLINICAL APPLICATIONS* 12(2):1870013, **2018**, DOI: 10.1002/prca.201870013, Nikita Gahoi, Darpan Malhotra, Aliasgar Moiyadi, Santosh G.Verma, Sanjeeva Srivastava
17. Multi-pronged proteomic analysis to study the glioma pathobiology using cerebrospinal fluid samples, *PROTEOMICS - CLINICAL APPLICATIONS* 12(3):1700056, **2017**, DOI: 10.1002/prca.201700056, Nikita Gahoi, Darpan Malhotra, Aliasgar Moiyadi, Mayuri Gandhi, Santosh G. Verma, Sanjeeva Srivastava
18. *OMICS: A Journal of Integrative Biology* Vol. 21, No. 11, **2017**, 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, doi.org/10.1089/omi.2017.0135
19. Nd<sup>3+</sup> Sensitized Yb<sup>3+</sup> luminescence In Oleic Acid Functionalized LaF<sub>3</sub>: Nd<sup>3+</sup>+Yb<sup>3+</sup> Nanoparticles, Pramod K, Mayuri Nalinkumar Gandhi, Ajit R. Kulkarni, *Advanced Materials Proceedings*, **2017**, 2(3), 289-293, DOI: 10.5185/amp.2017/502
20. "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**
21. 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**
22. 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**



23. 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, Bhave 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, Rojh 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
24. 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**.
25. 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
26. 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
27. Lanthanide-Doped Nanophosphor labels for Protein Microarrays, Sudipata sadhu, Mayuri Gandhi, Sanjeeva Srivastava, *Current Pharmacogenomics and Personalized Medicine*, **2015**,13, 51-60
28. 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
29. 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

30. 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
31. 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**
32. 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
33. Synthesis of ZnSe Quantum Dots with Stoichiometric Ratio Difference and Study of its Optoelectronic Property, Uzma Menon, U. Chatterjee, Mayuri Gandhi, S. Tiwari, S. duttagupta Procedia Materials Science 5 ( **2014** ) 1027 – 1033
34. A. Das, U. Chatterjee, S. P. Duttagupta and M. N. Gandhi, "Study of gamma irradiation effect on sol-gel derived lithium borate glassy film based metal insulator semiconductor structure" Journal of Electron Devices, Vol. 20, **2014**, pp. 1729-1732.
35. 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
36. 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
37. 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.
38. 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**)
39. 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
40. Nayan Agrawal, Harshita Bhatia, Mayuri Gandhi, Fluorescence study of CeF<sub>3</sub> with RE dopents in NIR, Journal of Fluorescence, (Communicated)

41. Nayan Agrawal, Harshita Bhatia, Mayuri Gandhi, Quantum cutting CeF<sub>3</sub> with Samarium in visible & Near Infrared for solar, , applied Nano Science,(Communicated)
42. M.N.Gandhi and S.M.Khopkar, (1995), Review on Crown Ether and Cryptand. Ind.Sci.and Res., 54, 345.
43. M.N.Gandhi and S.M.Khopkar, (1994), Ion Chromatography in Environmental Analysis, Ind.J.Env.Prot., 4, 256.
44. S.M.Khopkar and M.N.Gandhi, (1994), Calixarenes- New Complexing ligands for Metal ion Separations, IANCAS Bulletin,10, 20.
45. M.N.Gandhi and S.M.Khopkar, (1994), International Solvent Extraction Conference'93, J.Sci. and Ind.Res. 53, 630.
46. 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.
47. M.N.Gandhi, N.V.Deorkar and S.M.Khopkar, (1993), Solvent Extraction Separation of Cobalt and Nickel with Cyanex 272, Talanta, 40, 1535.
48. 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.
49. M.N.Gandhi and S.M.Khopkar, (1992), A Macrobicyclic polyether for the extractive separation of Cadmium, Chemica. Anal. (Warsaw), 37, 437.
50. 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.
51. M.N.Gandhi and S.M.Khopkar, (1992), Solvent extraction Separation of Thallium (I) with Cryptand 222 and Erythrosin, Anal.Chim.Acta, 270, 87.
52. M.N.Gandhi and S.M.Khopkar, (1992), Cryptand macrobicyclic polyethers as the extractants, J.Chem.Science. 8, 111.
53. 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.
54. 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.Chem30A, 706.

55. M.N.Gandhi and S.M.Khopkar, (1991), The Development of Water Pollution Monitoring Kit, Ind.J.Env.Prot. 11, 901
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57. M.N.Gandhi and S.M.Khopkar, (1988), Spectrophotometric methods for determination of air pollutants, Ind.J.Env.Prot. 9, 5
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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. Duttagupta, 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. Defect rich ZnO quantum dots as a potential multifunctional sunscreen and cosmetic active ingredient. A.Asok, A.R.Kulkarni, M.N. Gandhi, 16th International Congress on photo Biology-2014, Universidad Nacional De Cordoba, 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, a, Mayuri N Gandhi and A.R. Kulkarni, Accepted for Oral Presentation in IMMCT, Seoul, South Korea(2013)
5. U. Chatterjee, G. Sharma, A. Das, M. N. Gandhi, S. P. Duttagupta, "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. Duttagupta, 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. Duttgupta, 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. Duttgupta, 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. Duttgupta, 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. Duttgupta, 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  
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

3. ECCED 12-13 November 2013, Shanghai, China were attended and presented papers.

4. Advances in Functional Materials, AFM, UCLA, USA, 14-17 Aug 2017

5. Multifunctional Hybrid Nanomaterial, Sitges, Barcelona, Spain, 11-15 March 2019

6. Advances in Functional Materials Conference, AAAFM, UCLA, USA, 17-20 August, 2021, invited speaker

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