




## Faculty Details proforma for DU Web-site

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Title	Dr	First Name	Rajamani	Last Name	Nagarajan	Photograph
Designation		Professor				
Address		Department of Chemistry, University of Delhi Delhi 110 007				
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Email		rnagarajan@chemistry.du.ac.in				
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<b>Educational Qualifications</b>						
Degree		Institution			Year	
Ph.D.		Indian Institute of Science, Bangalore			1993	
M.Phil. / M.Tech.		-----			-----	
PG		Madurai Kamaraj University, Madurai			1987	
UG		Madurai Kamaraj University, Madurai			1985	
<b>Career Profile</b>						
2011.....Professor, University of Delhi, Delhi, India						
2005-2011.....Associate Professor, University of Delhi, Delhi, India						
2004-2005.....Assistant Professor (Teaching), Department of Chemistry, Kansas State University, USA						
2001-2004.....Post-doctoral Fellow, Department of Chemical Engineering, Kansas State University, USA						
2002-2001..... Postdoctoral Fellow, Organ State University, USA						
1999-2000.....Postdoctoral Fellow, Hebrew University of Jerusalem, Israel						
1996-1999.....Assistant Professor, National Engineering College affiliated to Manonmaniam Sundaranar University, Tamil Nadu, India						
1994-1996.....Research Associate, Jawaharlal Nehru Centre For Advanced Scientific Research, Bangalore, India						
1993-1994..... Postdoctoral Fellow, Institut de Matériaux, Nantes, France						
<b>Administrative Assignments</b>						
Currently none						
<b>Areas of Interest / Specialization</b>						
Materials Chemistry, Synthesis, structure-Property relations in Solids, Laser Materials, Photovoltaic materials, Environmental Chemistry						
<b>Subjects Taught</b>						
1. Group Theory						
2. Analytical Techniques						
3. Inorganic Reaction Mechanism						
4. Coordination Chemistry						
5. Carbon nano tubes and their composites						
6. Thermo analytical techniques						
7.Synthesis and Characterization of nanomaterials						
8. Supramolecular chemistry						
<b>Research Guidance</b>						
1. Supervision of awarded Doctoral Thesis.....18						
2. Supervision of Doctoral Thesis, under progress.....08						
3. Supervision of awarded M.Phil dissertations.....03						
<b>Publications Profile</b>						
1. Sanjay Kumar Saroj, Rajamani Nagarajan, Site preference for luminescent activator ions in doped fluoroperovskite RbZnF <sub>3</sub> ,						

Spectrochimica Acta Part A, 2018, 201, 339-345.

2. Promila Kumari, Meenakshi Pokhriyal, Sitharaman Uma, Rajamani Nagarajan, Efficient use of a polyamine carboxylate ligand to probe the extent of incorporation of stereochemically active  $\text{Bi}^{3+}$  in  $\text{ThO}_2$ , *Chemistry Select*, 2018, 3, 5005–5012.
3. Pooja Rawat, Rajamani Nagarajan, Mechano-chemical synthesis  $\text{K}_2\text{MF}_6$  (M = Mn, Ni) by cation-exchange reaction at room temperature, *Solid State Sciences*, 2018, 76, 33-37.
4. Pankaj Gupta, Rajamani Nagarajan, Fine tuning bifunctional properties of  $\text{Y}_{0.5}\text{Gd}_{0.5}\text{BO}_3$  by doping with  $\text{Ce}^{3+}$  and co-doping with  $\text{Li}^+$ ,  $\text{Ca}^{2+}$  and  $\text{Al}^{3+}$  following an epoxide mediated gel approach, *Materials Today Chemistry*, 2018, 7, 15-24.
5. Pooja Rawat, Shalu, Rajamani Nagarajan, Mechanochemical transformation of  $\text{ZnO}_2$  to highly defective ZnO, *Mater.Lett.*, 2018, 212, 178-181.
6. Pinki Chakraborty, Aman Kothari, Rajamani Nagarajan, Highly Ordered polyaniline as an efficient dye remover, *Adsorption Science & Technology*, 2018, 36 429-440.
7. Pooja Rawat, Rajamani Nagarajan, Ammonium fluoride mediated mechano chemical synthesis of  $\text{A}_2\text{PdF}_6$  (A = K, Rb) along with their catalytic role in environmental remediation. *J. Environ Chem Engg*, 2017, 5, 5460-5468.
8. Manish Kumar, Vikash Kumar Tripathi and Rajamani Nagarajan, Emergence of defect fluorite structure in nano-sized thoria through doping with some divalent transition metal ions, *J. Am. Cer. Soc.*, 2017, 101, 562-568.
9. Vikash Kumar Tripathi and Rajamani Nagarajan, Correlating the influence of two magnetic ions at the A-site with the electronic, magnetic and catalytic properties in  $\text{Gd}_{1-x}\text{Dy}_x\text{CrO}_3$ , *ACS Omega*, 2017, 2, 2657–2664.
10. Pooja Rawat, Sanjay Kumar Saroj, Mohini Gupta, G. Vijaya Prakash, Rajamani Nagarajan, Wet-chemical synthesis, structural characterization and optical properties of rare-earth doped halo perovskite  $\text{K}_3\text{GaF}_6$ , *J. Fluorine Chem.* 2017, 200, 1-7.
11. Meenakshi Pokhriyal, Sitharaman Uma, Rajamani Nagarajan, Facile synthesis and characterization of acetate intercalated Co-La layered double hydroxide, *J. Rare Earths*, 2017, 35, 474-479.
12. Vikash Kumar Tripathi, Rajamani Nagarajan, Sol-Gel Synthesis of High Pure Actinide Oxide  $\text{ThO}_2$  and its Solid Solutions with Technologically Important Tin and Zinc ions, *Inorg. Chem.*, 2016, 55, 12798-12806.
13. Ashish Kumar Srivastava, Alok Kumar Singh, Niraj Kumari, Richa Yadav, Antonino Gulino, Adolfo Speghini, Rajamani Nagarajan, Lallan Mishra, Pyridyl Substituted 4-(1,3-Dioxo-1H,3Hbenzo[de]isoquinolin-2-ylmethyl)-benzamides with Aggregation Enhanced Emission and Multi-Stimuli- Responsive Properties, *J. Lumin*, 2017, 182, 274–282.
14. Rajamani Nagarajan, Pankaj Gupta, Poonam Singh, Pinki Chakraborty, An ethylene glycol intercalated monometallic layered double hydroxide based on iron as an efficient bifunctional catalyst, *Dalton Trans.*, 2016, 45, 17508–17520.
15. Md. Zakir Hussain, Sabah Khan, Rajamani Nagarajan, Urfi Khan, and Vishnu Vats, Fabrication and Micro hardness Analysis of MWCNT/MnO<sub>2</sub> Nanocomposite, *Journal of Materials*, 2016, Article ID 6070468, 10 pages.
16. Vikash Kumar Tripathi, Rajamani Nagarajan, Determination of solubility limit of  $\text{Sn}^{4+}$  in fluorite structured terbia with simultaneous evaluation of photo catalytic function, *Dalton Trans*, 2016, 45, 11191–11197.
17. Poonam Singh, Rajamani Nagarajan, Effect of uniaxial pressure on the Raman spectra of fluoro perovskites containing manganese with sodium or potassium, *Spec. Lett*, 2016, 49, 444-446.
18. Vikash Kumar Tripathi, Rajamani Nagarajan, Magnetically separable, bifunctional catalyst  $\text{MgFe}_2\text{O}_4$  obtained by epoxide mediated synthesis, *Adv. Powder. Tech*, 2016, 27, 1251–1256.
19. A. Rai, A. K. Singh, A. K. Sonkar, A. Prakash, J. K. Roy, Rajamani Nagarajan, L. Mishra, A smart switchable module for detection of multiple-ions via turn on dual-optical readout and their cell-imaging studies. *Dalton Trans* 2016, 45, 8272-8287.
20. P. Singh, Rajamani Nagarajan, Facile synthesis and photocatalytic properties of light emitting layered compounds of Zn-La-Tb hydroxide and oxoanions. *Appl. Clay Sci.*, 2016, 126, 173-179.
21. V. K. Tripathi, Rajamani Nagarajan, Rapid Synthesis of Mesoporous, Nano-Sized  $\text{MgCr}_2\text{O}_4$  and Its Catalytic Properties. *J. Am. Ceram. Soc.* 2016, 99, 814-818.
22. Pooja Rawat, Rajamani Nagarajan,  $\text{Cd}(\text{OH})\text{F}$ : Synthesis, Structure, optical and photocatalytic properties. *J. Fluorine Chem.* 2016, 182, 98-103.

#### Conference Organization/ Presentations (Last three years)

1. Fine tuning bifunctional properties of  $\text{Y}_{0.5}\text{Gd}_{0.5}\text{BO}_3$  by doping with  $\text{Ce}^{3+}$  and co-doping with  $\text{Li}^+$ ,  $\text{Ca}^{2+}$  and  $\text{Al}^{3+}$  following an epoxide mediated gel approach, Pankaj Gupta and Rajamani Nagarajan, Advances in Analytical Sciences, ICAAS-2018, CSIR-Indian Institute of Petroleum-Dehradun, Uttarakhand, March 15-17 (2018). *Best poster award*.
2. Mechanochemical transformation of  $\text{ZnO}_2$  to highly defective ZnO, Shalu, Pooja Rawat, Sitharaman Uma and Rajamani Nagarajan, Advances in Analytical Sciences, ICAAS-2018, CSIR-Indian Institute of Petroleum-Dehradun, Uttarakhand, March 15-17 (2018).
3. Emergence of defect fluorite structure in nano-sized thoria doping with some divalent transition-metal ions, Manish Kumar, Vikash Kumar Tripathi and Rajamani Nagarajan, Advances in Analytical Sciences, ICAAS-2018, CSIR-Indian Institute of Petroleum-Dehradun, Uttarakhand, March 15-17 (2018).
4. Enhancement of Thermal Property of PMMA through Composite Formation with LDH, P. Chakraborty, R. Nagarajan, International Conference on Materials Science & Technology (ICMTech) University of Delhi, India 2016.
5. Manganese Containing Ternary Copper Sulfides Synthesis by Thermolysis Method in Ethylene Glycol, P. Gupta, M. Gusain

and R. Nagarajan, International Conference on Materials Science & Technology (ICMTech) University of Delhi, India 2016.

6. Stabilization of Oxyfluorides Containing Co in IV by Hyper halogens, P. Singh and R. Nagarajan, International Conference on Materials Science & Technology (ICMTech) University of Delhi, India 2016.

7. Luminescent Layered Materials, S. K. Saroj and R. Nagarajan, International Conference on Materials Science & Technology (ICMTech) University of Delhi, India 2016.

8. Rapid Synthesis of Mesoporous Nano-Sized  $MgCr_2O_4$  and its Catalytic Properties, V. K. Tripathi, R. Nagarajan, International Conference on Materials Science & Technology (ICMTech) University of Delhi, India 2016.

9. Synthesis of  $M(OH)F$  and its use as a Single Source Precursor for the Generation of F-doped MO [M- Zn, Cd], P. Rawat and R. Nagarajan, 18<sup>th</sup> Chemical research society of India (CRSI National symposium in chemistry), Chandigarh, Punjab University, India 2016.

10. Topochemical Oxidation of perovskite  $KCoF_3$  to  $K_2PtCl_6$  Structure Type Oxyfluorides, P. Singh and R. Nagarajan, 18<sup>th</sup> Chemical research society of India (CRSI National symposium in chemistry), Chandigarh, Punjab University, India 2016.

11. Synthesis of Rb Containing Fluoride Host Matrices, V. K. Tripathi, S. K. Saroj and R. Nagarajan, 9<sup>th</sup> National conference on Solid State Chemistry and Allied Areas ISCAS-2015, organized by Bhaskaracharya College of Applied Sciences (University of Delhi), 8-10 May 2015.

#### Research Projects (Major Grants/Research Collaboration)

- Department of Science and Technology (Govt of India) funded project with no EMR/2016/006131

#### Awards and Distinctions

K.P. Abraham Gold Medal and cash award for the Best Thesis in Materials Chemistry, Indian Institute of Science, Bangalore, India.

#### Association With Professional Bodies

1. Member of the American Chemical Society
2. Material Research Society of India
3. Society for Material Chemists
4. Member of American Nano Society

Signature of Faculty Member

Signature of HOD