

**Name: J. NAGENDRA BABU**  
**Designation: ASSISTANT PROFESSOR**  
**Centre CENTRE FOR CHEMICAL SCIENCES**  
**School of Basic and Applied Sciences**  
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## Education

Course	Institution	Year	Details
Ph.D. Chemistry	Deptt. Of Chem., Guru Nanak Dev University, Amritsar	2009	Studies in the synthesis and association behavior of calix[4]arene and thiacalix[4]arene based receptors
M. Sc. (Hons) Chemistry	Deptt. Of Chem., Delhi University, New Delhi	2001	Organic Chemistry Specialization
NET-LS	CSIR/UGC, New Delhi	2001	Chemical Sciences
NET-CSIR JRF	CSIR/UGC, New Delhi	2003	Chemical Sciences

## Experience

1. Assistant Professor, Centre for Environmental Science and Technology – 2011 to till date
2. As Research Scientist at Thapar Centre for Industrial Research and Development, Patiala – 2009 to 2011

## Teaching Assignments

1. Physical Chemistry
2. Organic Chemistry
3. Environmental Chemistry
4. Instrumental Methods in Environment Science
5. Air and Noise Pollution and Management
6. Advanced Instrumental Techniques in Environment
7. Physical Medicinal Chemistry
8. Emerging Trends in Environment Science
9. Water and Soil Pollution and its Management
10. Environmental Education

## Research Project

Handled

### Ongoing

1. DST FAST TRACK YOUNG SCIENTIST Award March, 2012 to March, 2015

### Professional Recognition /Awards/Scholarship

1. CSIR/UGC NET Junior Research Fellowship 2003
2. CSIR/UGC NET Lectureship 2001

### Peer Recognition

### Area specializations/Research Interest

1. Supramolecular Chemistry
2. Advanced Catalysis and Nanomaterials
3. Air Pollution
4. Environmental Monitoring

### Publications

#### Research Papers

1. Yadav, R., Sharma, A.K. and **Babu, J.N.**, (2015). Sorptive Removal of Arsenite [As (III)] and Arsenate [As (V)] by Fuller's Earth Immobilized Nanoscale Zero-valent Iron Nanoparticles (F-nZVI): Effect of Fe<sup>0</sup> Loading on Adsorption Activity. *Journal of Environmental Chemical Engineering*. (IF=Slated in 2016)
2. Vaid, U., Mittal, S. and **Babu, J.N.**, (2015). Influence of anion induced proton abstraction on Cu (II) adsorption by alginate acid. *Reactive and Functional Polymers*, 97, pp.48-55. (IF=2.52)
3. Kumar, R., Kumar, R., Mittal, S., Arora, M. and **Babu, J.N.**, (2015). Role of soil physicochemical characteristics on the present state of arsenic and its adsorption in alluvial soils of two agri-intensive region of Bathinda, Punjab, India. *Journal of Soils and Sediments*, pp.1-16. (IF=2.14)
4. Sharma, A.K., Kumar, R., Mittal, S., Hussain, S., Arora, M., Sharma, R.C. and **Babu, J.N.**, (2015). In situ reductive regeneration of zerovalent iron nanoparticles immobilized on cellulose for atom efficient Cr (vi) adsorption. *RSC Advances*, 5(109), pp.89441-89446. (IF=3.84)
5. Mittal, S., Vaid, U., Nabi Najar, G., & Nagendra Babu, J. (2015). Removal of hexavalent chromium from aqueous solution: a comparative study of cone biomass of "Picea smithiana" and activated charcoal. *Desalination and Water Treatment*, (ahead-of-print), 1-15. (IF = 1.17)
6. Vaid, U., Mittal, S., & Babu, J. N. (2014). Removal of hexavalent chromium from aqueous solution using biomass derived fly ash from Waste-to-Energy power plant. *Desalination and*

*Water Treatment*, 52(40-42), 7845-7855. **(IF=1.17)**

7. Kumar, M., Bhalla, V., Dhir, A., & Babu, J. N. (2010). A Ni<sup>2+</sup> selective chemosensor based on partial cone conformation of calix [4] arene. *Dalton Transactions*, 39(42), 10116-10121. **(IF = 4.20)**
8. Kumar, M., Babu, J. N., & Bhalla, V. (2010). Azophenol appended (thia) calix [4] arenes for colorimetric sensing of anions: A complexation induced extended conjugation. *Talanta*, 81(1), 9-14. **(IF = 3.55)**
9. Kumar, M., Babu, J. N., Bhalla, V., & Kumar, R. (2010). Ratiometric/'On–Off'sensing of Pb<sup>2+</sup> ion using pyrene-appended calix [4] arenes. *Sensors and Actuators B: Chemical*, 144(1), 183-191. **(IF = 4.10)**
10. Kumar, M., Babu, J. N., & Bhalla, V. (2010). Fluorescent chemosensor for Cu<sup>2+</sup> ion based on iminoanthryl appended calix[4]arene. *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, 66(1-2), 139-145. **(IF = 1.49)**
11. Kumar, M., Babu, J. N., Bhalla, V., & Dhir, A. (2009). Chromogenic sensing of Cu (II) by imino linked thiacalix [4] arene in mixed aqueous environment. *Inorganic Chemistry Communications*, 12(4), 332-335. **(IF = 1.78)**
12. Babu, J. N., Bhalla, V., Kumar, M., Puri, R. K., & Mahajan, R. K. (2009). Chloride ion recognition using thiourea/urea based receptors incorporated into 1,3-disubstituted calix[4] arenes. *New Journal of Chemistry*, 33(3), 675-681. **(IF = 3.09)**
13. Babu, J. N., Bhalla, V., Kumar, M., Mahajan, R. K., & Puri, R. K. (2008). A chloride selective sensor based on a calix [4] arene possessing a urea moiety. *Tetrahedron Letters*, 49(17), 2772-2775. **(IF = 2.38)**
14. Bhalla, V., Babu, J. N., Kumar, M., Hattori, T., & Miyano, S. (2007). Synthesis and binding studies of novel thiacalixpodands and bithiacalixarenes having O, O "-dialkylated thiacalix [4] arene unit (s) of 1, 3-alternate conformation. *Tetrahedron Letters*, 48(9), 1581-1585. **(IF = 2.38)**
15. Kumar, M., Nagendra babu, J., Bhalla, V., & Singh Athwal, N. (2007). Visible colorimetric sensor for fluoride ion based on o-phenylenediamine. *Supramolecular Chemistry*, 19(7), 511-516. **(IF = 2.39)**
16. Babu, J. N., Bhalla, V., Kumar, M., & Singh, H. (2006). Selective colorimetric sensing of cyanide ions over fluoride ions by calix[4]arene containing thiourea moieties. *Letters in Organic Chemistry*, 3(10), 787-793. **(IF=0.66)**
17. Kumar, M., nee Bhalla, V. S., & Babu, J. N. (2003). Synthesis and binding studies of new bis-calix [4] arenes containing aromatic and heteroaromatic units. *Tetrahedron*, 59(18), 3267-3273. **(IF = 2.64)**
18. Kumar, M., Sharma, V., & Babu, J. N. (2002). Synthesis of New Cryptands Containing 3, 5-Disubstituted-1-Methyl or 1-Hexadecyl-Pyrazole by [3+ 2] Condensation and Reduction. *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, 42(3), 247-250.

**(IF=1.49)**

### Articles in Proceedings

19. "Integrating Biochar as Conservation Agriculture Tool under Climate Change Mitigation Scenario." Rishikesh Singh, Pratap Srivastava, Shweta Upadhyay, Pardeep Singh, and A. S. Raghubanshi and **J. Nagendra Babu** Proceedings of National Conference on Climate Change: Impacts, Adaptation, migration Scenario & Future Challenges in Indian Perspective, New Delhi, 2-3, march-2015. Pp.9-18. ISBN: 978-93-5235-335-4.
20. Integrated Management of Mercerizing Wastewater from a Denim Fabric Manufacturing Industrial Facility. Akepati S. Reddy, Vishal Duggal, **J. Nagendra Babu**, Mukesh Aggarwal, Rabindra K. Patel and Harpreet Singh, *Proceedings of 2<sup>nd</sup> International Conference on Environmental Management 2010*, 652.
21. Zero effluent discharge strategy for wastewater management from crushed bone acid leaching process. Akepati S. Reddy, Vishal Duggal, Mukesh Aggarwal, Rabindra K. Patel, **J. Nagendra Babu**, Rambahadur Verma and Harinder Kumar, *Proceedings of 2<sup>nd</sup> International Conference on Environmental Management 2010*, 864.

**Citations : 288**

**h-Index : 11**

**i-10 Index: 11**

**Cumulative Impact Factor: 56.14**

### Book Chapters

### Review Articles

22. Vishwakarma, G. S., Gautam, N., **Babu, J. N.**, Mittal S. & Jaitak V. Polymeric Encapsulates of Essential Oils and their Constituents: A Review of Preparation Techniques, Characterization and Sustainable Release Mechanisms. *Polymer Reviews*, 2016, DOI:10.1080/15583724.2015.1123725. **(IF=6.16)**
23. Kaur, H., Kumar, R., **Babu, J. N.**, & Mittal, S. (2015). Advances in arsenic biosensor development—A comprehensive review. *Biosensors and Bioelectronics*, 63, 533-545. **(IF = 6.41)**
24. Singh, R., **Babu, J. N.**, Kumar, R., Srivastava, P., Singh, P., & Raghubanshi, A. S. (2015). Multifaceted application of crop residue biochar as a tool for sustainable agriculture: An ecological perspective. *Ecological Engineering*, 77, 324-347. **(IF = 2.58)**

### Popular Articles

### Monographs

<b>Technical Reports</b>			
<b>Workshop/Conferences</b>			
<b>Organised</b>			
<b>S. No.</b>	<b>Training Program</b>	<b>Duration</b>	<b>Organized by</b>
1.	3-day training program on 'Instrumental Method of Analysis'	04th - 06th Oct 2010	Thapar Centre For Industrial Research and Development, Patiala
2.	3-day training program on 'Air Quality Monitoring'	25th-27th Nov 2010	Thapar Centre For Industrial Research and Development, Patiala
3.	PSCST Sponsored International Biodiversity Day Celebration	2013, Co-Organizer	Central University of Punjab, Bathinda
4.	Foundation Day Celebration 'Painting, Poster Making and Photography Competition'	25th Feb 2011 Member of Organizing Committee	Central University of Punjab, Bathinda
<b>Attended</b>			
<b>S. No.</b>	<b>Title of Conference/ Seminar/ Workshop</b>	<b>Date(s) of the Event</b>	<b>Organised by</b>
1.	International Conference on Environmental Management	Oct 25-28, 2010	Jawaharlal Nehru Technological University Hyderabad (JNTUH), Hyderabad(AP)
2.	National Seminar on "Chemistry and Environment"	Oct. 11-12, 2006	PG Department of Chemistry, Khalsa College, Amritsar
3.	National Bioorganic Symposium-7	Nov. 9-10 2001	Guru Nanak Dev University, Amritsar, Punjab -143005
4.	CRSI - 9th National Symposium in Chemistry	Feb. 1-4, 2007	Delhi University, New Delhi
5.	3rd J-NOST (National Organic	Nov. 15-19, 2007	Guru Nanak Dev University, Amritsar,

	Symposium Trust)		Punjab -143005
6.	Workshop on High Resolution NMR Spectroscopy of Polymers	Dec. 1-2, 2001	Indian Institute of Technology (IIT) Delhi, Hauz Khas, New Delhi
7.	National School on NMR spectroscopy	May 23- Jun 03 2005	North Eastern Hill University, Shillong, Meghalaya
8.	National Seminar on Environment and Cancer	2012	Central University of Punjab, Bathinda

### **Research Grants**

### **Other Achievements**

M. Phil. Dissertation Completed 06; pursuing 02

Ph.D. Dissertation Pursuing 03

### **Collaboration**

1. Dr. Sunil Mittal, Assistant Professor, Centre for Environmental Science and Technology for Environmental Monitoring.
2. Prof. R. C. Sharma, Dean and CoC, Centre for Environmental Science and Technology for Biochar Studies.