

Curriculum Vitae



Name : Dr. Inderjeet Tyagi
Designation : Scientist B (Chemist)
Father's Name : Shri. Umesh Tyagi
Date of Birth : 15th January 1990
Mailing Address : **Dr. Inderjeet Tyagi**
Scientist B
Ph. D (Chemistry)
Centre for DNA Taxonomy
Molecular Systematics Division
Zoological Survey of India
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Academic Qualifications :
January 2014 – June 2016

Ph. D. thesis title

July 2011- August 2013

June 2008- June 2011

April 2006-May 2007

April 2004-May 2005

Employment Record

- Ph.D. in Chemistry Department of Chemistry, **IIT Roorkee**, India. (**Thesis Grade: A⁺**)
- Development of Novel adsorbents for removal of noxious impurities from wastewater
- M.Sc. Chemistry (Commercial Methods of Chemical Analysis), Gurukul Kangri Viswavidyalaya, Haridwar. First class (**78.8%**)
- B.Sc. Chemistry, Mahatma Jyotiba Phule Rohilkhand University, Bareilly. First Class (**69.3%**)
- 12th Kendriya Vidyalaya, Moradabad, Central Board of Secondary Education, Delhi. First Class (**75.8 %**)
- 10th Kendriya Vidyalaya, Moradabad Central Board of Secondary Education, Delhi. First Class (**75.4 %**)
- **Scientist B (Chemist)**, Zoological Survey of India, (Ministry of Environment, Forest and Climate Change)
- **Research Associate**, Multinational Project BRICS (Collaborating Countries China and Russia) DST Project (**05/01/2018-30/09/2018**)
- **Program Officer**, CBRI-ENVIS Project, CSIR-Central Building Research Institute, Roorkee (**07/04/2017 - 30/09/2017**)
- **Project fellow (JRF)** in DST project Entitled “Development of Effective Adsorbents from Waste Rubber Tire for Wastewater Treatment.” at IIT Roorkee

Awards and Fellowships

- *Director's Best Technology Award*, Process Know-how for the Preparation of Nano-Silica, **Feb 2020** (CSIR-CBRI)
- *Senior Research Fellow* under *Ministry of Human Resource and Development (MHRD)* at IIT Roorkee
- *Junior Research fellow* under *Ministry of Human Resource and Development (MHRD)* at IIT Roorkee.
- *Junior Research fellow* in Department of Science and Technology (DST) Project Government of India, New Delhi.
- Qualified CSIR-NET-LS (**AIR 33**)

Field of Research

- *Environmental DNA*
- *Metasystematics studies*
- *Wastewater Treatment*
- *Water Quality and Management*

Patent: 01

1. An Improved Process for the Preparation of Silica Nanoparticles for Applications in Cement Based Materials (**Application No. 0157NF2018**)
Inventor: L.P. Singh, S. Naik B, U. Sharma, D. Ali, **I. Tyagi**

Technology Transfer: 01

1. Process know-how for preparation of silica Nanoparticles to M/s Poysha NanoTech LLP, India, May 2019.

Projects Ongoing: 02

S. No	Project Title	Funding Agency	Role/ Year
1.	DNA Metasystematics studies for the assessment of the Macrobiome and Microbiome in Freshwater Ecosystem with Relation to the Noxious Pollutants	ZSI, (MoEFCC)	PI (2019-2022)
2.	Insights into the Gut Microbiome of thrips (Thysanoptera: Insecta) from India	ZSI, (MoEFCC)	Co-PI (2019-2022)

Projects associated with and completed in recent past: 04

S. No	Project Title	Funding Agency	Role/ Year
1.	Development of nano-engineered concrete for Sustainable Infrastructures	DST Multilateral Project (BRICS)	Team Member (2018)
2.	CBRI-ENVIS Centre on Flyash, Funded by Ministry of Environment Forest and Climate Change.	MoEFCC	Program Officer (2017-2018)
3.	Modification, Characterization and application of naturally occurring biomaterials for the removal of toxic contaminants from industrial	DST Bilateral Project (Indo-South Africa)	Team Member (2015-2016)

	wastewater		
4.	Development of effective adsorbents from waste rubber tire for wastewater treatment	DST National Project	Team Member (2013-2015)

Book Chapter: 01

1. **I. Tyagi**, V. Kumar, K. Tyagi, R. Bhutiani, F. Ahamad, N. Kumar, K. Chandra, Physico-Chemical Analysis of East Kolkata Wetlands and its future aspects, East Kolkata Wetland Compendium, ZSI, MoEFCC.

Research Papers/Reviews: 60 Papers in International Peer Reviewed Journals with cumulative impact factor of more than 300.

Communicated: (2020)

1. **I. Tyagi**, K. Tyagi, K. Chandra, V. Kumar, Microbial Diversity in Indian Paper Industries wastewater as revealed by Targeted Amplicon Sequencing, *Scientific Reports* (Nature). (Under Review). (I.F. 4.7)
2. **I. Tyagi**, K. Tyagi, R. Bhutiani, K. Chandra, V. Kumar, Bacterial Diversity Assessment of World's Largest Sewage Fed Fish Farms with Special Reference to Water Quality: A Ramsar Site, *Environment International* (Elsevier). (Under Review). (I.F. 7.9)
3. K. Tyagi, **I. Tyagi**, P. Prasad, K. Chandra, V. Kumar, Insights into the Gut Microbial Diversity of Twelve Spiders Species and their Functional Activity, *Scientific Reports* (Nature). (Under Review). (I.F. 4.7)
4. S. Naik B, L.P. Singh, S. Sinha, **I. Tyagi**, Effect of microencapsulated eutectic phase change materials incorporation on the thermo-physico properties of different mortar mix ratios, *Int J Energy Res.* (Wiley). (Under Review). (I.F. 3.4)

Selected Publications: (Last Four Years)

1. V. Kumar, K. Tyagi, R. Chakraborty, P. Prasad, S. Kundu, **I. Tyagi**, K. Chandra, The Complete Mitochondrial Genome of endemic giant tarantula, *Lyrognathus crotalus* (Araneae: Theraphosidae) and comparative analysis. *Scientific Reports*, 10 (2020) 74 (I.F. 4.5)
2. K. Tyagi, V. Kumar, N. Poddar, P. Prasad, I. Tyagi, S. Kundu, K. Chandra, The gene arrangement and phylogeny using mitochondrial genomes in spiders (Arachnida: Araneae). *International Journal of Biological Macromolecules*, 146, 2020, 488–496. (I.F. 4.7)
2. S. Naik B, L.P. Singh, S. Sinha, **I. Tyagi**, A. Rawat Studies on the mechanical properties and thermal behavior of microencapsulated eutectic mixture in gypsum composite board for thermal regulation in the buildings, *Journal of Building Engineering*, 31, (2020), 101400. (I.F. 2.3)
3. S. Singh, S. Maiti, S. Rani, H. Raj, R.S. Bisht, S.K. Panigrahi, **I. Tyagi**, Ti doped BaMnO₃ perovskite structure as photocatalytic agent for the degradation of noxious air and water pollutants, *SN Applied Sciences*, 2, (2020) 310.
4. Srinivasaraonaik B, L.P. Singh, **I. Tyagi**, A. Rawat, S. Sinha, Microencapsulation of a eutectic PCM using in situ polymerization technique for thermal energy storage, *Int J Energy Res.* 2020, 1–11. (I.F. 3.4)
5. L.P. Singh, D. Ali, **I. Tyagi**, U. Sharma, R. Singh, P. Hou, Durability studies of nano-engineered fly ash concrete, *Construction and Building Materials*, 194, (2019), 205-215. (I.F. 4.0)

6. D. Pathania, C. Verma, P. Negi, **I. Tyagi**, M. Asif, N.S. Kumar, E.H. Al-Ghurabi, S. Agarwal, V.K. Gupta, Novel nanohydrogel based on itaconic acid grafted tragacanth gum for controlled release of ampicillin, *Carbohydrate polymers* 196, (2018), 262-271. (I.F. 6.0).
7. S. Agarwal, **I. Tyagi**, V.K. Gupta, M. Sohrabi, S. Mohammadi, A.N. Golikand, A. Fakhri, Iron doped SnO₂/Co₃O₄ nanocomposites synthesized by sol-gel and precipitation method for metronidazole antibiotic degradation, *Materials Science and Engineering C*,70 (2017) 178-183. (I.F. 4.9)
8. M. Verma, **I. Tyagi**, V.K. Gupta, R. Chandra, Adsorptive removal of Pb (II) ions from aqueous solution using CuO nanoparticles synthesized by sputtering method, *Journal of Molecular Liquids* 225 (2017),936-944. (I.F. 4.5)
9. M.S. Karmacharya, V.K. Gupta, **I. Tyagi**, S. Agarwal, V.K. Jha, Removal of As (III) and As (V) using rubber tire derived activated carbon modified with alumina composite, *Journal of Molecular Liquids*, 216 (2016) 836-844. (I.F. 4.5)
10. V.K. Gupta, S. Agarwal, **I. Tyagi**, M. Sohrabi, A. Fakhri, S. Rashidi, N. Sadeghi, Microwave-assisted hydrothermal synthesis and adsorption properties of carbon nanofibers for methamphetamine removal from aqueous solution using a response surface methodology, *Journal of Industrial and Engineering Chemistry*, 41, (2016), 158-164. (I.F. 4.9)
11. S. Agarwal, **I. Tyagi**, V.K. Gupta, N. Ghasemi, M. Shahivand, M. Ghasemi, Kinetics, equilibrium studies and thermodynamics of methylene blue adsorption on *Ephedra strobilacea* saw dust and modified using phosphoric acid and zinc chloride, *Journal of Molecular Liquids* 218, (2016) 208-218. (I.F. 4.5)
12. V.K. Gupta, R. Chandra, **I. Tyagi**, M. Verma, Removal of hexavalent chromium ions using CuO nanoparticles for water purification applications, *Journal of Colloid and Interface Science*, 478, (2016), 54-62. (I.F. 6.3)
13. S. Agarwal, , N. Sadeghi, **I. Tyagi**, V.K. Gupta, A. Fakhri, Adsorption of toxic carbamate pesticide oxamyl from liquid phase by newly synthesized and characterized graphene quantum dots nanomaterials, *Journal of Colloid and Interface Science*, 478, 2016, 430-438. (I.F. 6.3)
14. V.K. Gupta, O. Moradi, **I. Tyagi**, S. Agarwal, H. Sadegh, R. Shahryari-Ghoshekandi, A.S.H. Makhlof, M. Goodarzi, A. Garshasbi, Study on the removal of heavy metal ions from industry waste by carbon nanotubes: Effect of the surface modification: a review, *Critical Reviews in Environmental Science and Technology* 46, (2016) 93-118. (I.F. 6.3)
15. A. Fakhri, S. Behrouz, M. Asif, **I. Tyagi**, S. Agarwal, V. K. Gupta, Synthesis, structural and morphological characteristics of NiO nanoparticles co-doped with boron and nitrogen *Journal of Molecular Liquids*, 213(2016)326-331. (I.F. 4.5)
16. A. Fakhri, S. Behrouz, **I. Tyagi**, S. Agarwal, V.K. Gupta, Synthesis and characterization of ZrO₂ and carbon-doped ZrO₂ nanoparticles for photocatalytic application, *Journal of Molecular Liquids* 216, (2016),342-346. (I.F. 4.5)
17. S. Agarwal, **I. Tyagi**, V.K. Gupta, M.H. Dehghani, J. Jaafari, D. Balarak, M. Asif, Rapid removal of noxious nickel II using novel gamma alumina nanoparticles and multiwalled carbon nanotubes Kinetic and isotherm studies, *Journal of Molecular Liquids*, 224, (2016) 618-623 (I.F. 4.5)
18. S. Nekouei, F. Nekouei, **I. Tyagi**, S. Agarwal, V.K. Gupta, Mixed cloud point/solid phase extraction of lead (II) and cadmium (II) in water samples using modified-ZnO nanopowders, *Process Safety and Environmental Protection*, 99, (2016), 175-185. (I.F. 4.3)
19. F. Nekouei, H. Kargarzadeh, S. Nekouei, **I. Tyagi**, S. Agarwal, VK Gupta, Preparation of Nickel hydroxide nanoplates modified activated carbon for Malachite Green

removal from solutions: Kinetic, thermodynamic, isotherm and antibacterial studies, *Process Safety and Environmental Protection*, 102, (2016) 85-97. (I.F. 4.3)

20. M. Ghaedi, M. reza Rahimi, A.M. Ghaedi, **I. Tyagi**, S. Agarwal, V.K. Gupta Application of least squares support vector regression and linear multiple regression for modeling removal of methyl orange onto tin oxide nanoparticles loaded on activated carbon and activated carbon prepared from Pistacia atlantica wood, *Journal of Colloid and Interface Science*, 461, (2016) 425-434. (I.F. 6.3)
21. S. Agarwal, **I. Tyagi**, V.K. Gupta, M.H. Dehghani, R. Ghanbari, Investigating the residual aluminum elimination from conventional and enhanced coagulation by phosphate compounds in wastewater treatment process, *Journal of Molecular Liquids* 221, (2016) 673-684. (I.F. 4.5).
22. M. Ghaedi, S. Hajjati, Z. Mahmudi, **I. Tyagi**, S. Agarwal, A. Maity, V.K. Gupta, Modeling of competitive ultrasonic assisted removal of the dyes-Methylene blue and Safranin-O using Fe₃O₄ nanoparticles, *Chemical Engineering Journal* 268,(2015) 28-37. (I.F. 8.3).

International Collaboration(s):

1. University of Johannesburg, South Africa.
2. Adain Mickiewicz University in Poznań, Faculty of chemistry, Uniwersytetu Poznańskiego 8, 61 -614 Poznań.
3. Tambov State Technical University, Russia.
4. King Abdulaziz University, Jeddha, Saudi Arabia

National Collaboration(s):

1. Indian Institute of Technology (IIT), Roorkee
2. CSIR- Central Building Research Institute, Roorkee.
3. Jamia Millia Islamia (Cent. University), New Delhi.
4. Gurukul Kangri Visvavidyalaya, Hardwar.

Memberships:

- **Life time member**, Indian Science Congress Association.

Achievements:

- Outstanding Reviewer for **Journal of Cleaner Production; Journal of CO₂ Utilization; Materials Chemistry and Physics.**
- Acting as Reviewer for **Carbon; Scientific Reports; Journal of Colloid and Interface Science; Journal of Molecular Liquids; Journal of Industrial and Engineering Chemistry; Chemosphere and many more (~30).**

***Note:** Applications from students to join the group for their Post graduation projects (M. Sc & M.Tech) or Ph.D. thesis in the topics related to our research interests are welcome. Contact info: inderjeettyagi@zsi.gov.in; indertyagi011@gmail.com