

Dr. Mohd Irfan Naikoo

(PhD, AMU Aligarh, India; V. Scientist, UKCEH Edinburgh, UK; Post-Doctoral Fellow, IIT Hyderabad, India)

CONTACT INFORMATION

1. Ecology and Environment Laboratory
Department of Botany
Aligarh Muslim University, India- 202002
2. Department of Civil Engineering and
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OBJECTIVES

To devote myself for the betterment of life on biosphere by sharing and contributing through ecological knowledge and experience

STRENGTHS

Good analytical skill, aptitude for problem solving and making critical decisions;
Good logic and reasoning ability to identify the strengths and weaknesses of alternative solutions, Ability to work under pressure and with minimal supervision;
Quick learner, Hardworking, Diligent and trustworthy

RESEARCH AREA

Plant Ecology and Environment, Elemental Biogeochemistry,
Environmental Chemical pollution

RESEARCH INTERESTS

Biogeochemistry, fate and behaviour of potential toxic trace elements, contaminants of emerging concern and nutrients in (agro)ecosystem (**My PhD work**),
Ecophysiology of Plants in Changing Environments,
Mechanistic understanding of Improving Nitrogen Use Efficiency (NUE) in Crop Plants to minimize the excessive nitrogen loss to the environment, and prevent a clash between our food security and environmental sustainability,
I am also interested in studying the impact of Reactive Nitrogen (N_r) and Ozone depositions on sensitive ecosystems (**My work as V. Scientist at UKCEH, Edinburgh**)

EDUCATION

2014-2019: Doctor of Philosophy (PhD) in Botany (Specialization Ecology and Environmental Botany), Aligarh Muslim University, Aligarh, India
Thesis title: Bioavailability of cadmium, nickel and lead in a plant-aphid-ladybird food chain (Awarded on 12-09-2019)
Advisor: Prof. Fareed Ahmad Khan (Department of Botany, Aligarh Muslim University, Aligarh, India)

2010-2012: Master of Science in Botany (Specialization Plant Ecology and Environment), Barkatullah University, Bhopal, India

2009-2010: PG Diploma in Computer Programming, Rashtriya Computer Saksharta Mission (RCSM), New Delhi, India

2008-2009: Bachelor of Education (B.Ed.), University of Kashmir, Srinagar J&K, India

2005-2007: Bachelor of Science (B.Sc.), University of Kashmir, Srinagar J&K, India

EMPLOYMENT HISTORY	<p>May 2021 to Present – Department of Civil Engineering and Department of Climate Change, Indian Institute of Technology (IIT) Hyderabad, India. Post-Doctoral Fellow with Dr. Asif Qureshi</p> <p>June 2018 to September 2018 – UK Centre for Ecology and Hydrology (UKCEH), Edinburgh, United Kingdom. Visiting Research Scientist with Prof Mark Sutton</p> <p>2013- Worked as an Academic Administrator cum Teacher in a local School (MIE Akura Anantnag Kashmir)</p>
AWARDS & ACHIEVEMENTS	<p>1. NEWTON-BHABHA NEWS India-UK Research Fellowship- 2018</p> <p>2. Best Paper Presentation Award in Biospark - All India Life Science Fest, 21-22 February 2018 at Aligarh Muslim University, Aligarh</p> <p>3. Best Paper Presentation Award in Third International Conference on Bioresource and Stress Management 8-11th November, 2017 at SIAM Jaipur, Rajasthan, India</p> <p>4. Best Paper Presentation Award in International Conference on Advances in Agricultural and Biodiversity Conservation for Sustainable Development (ABCD-2017) 27-28, October, 2017 at C. C. S. University, Meerut, Uttar Pradesh</p>
EXPERIMENTAL SKILLS	<p>Laboratory and Field Scale experiments at Ecosystem level</p> <p>Sample Preparations for Various Analytical and Electron Microscopy Techniques, Proteomics and Genomics</p> <p>Plant Anatomy and Microtomy</p> <p>ICPMS</p> <p>GCMS</p> <p>AMFIA - Flow Injection Analyzer</p> <p>Atomic Absorption Spectroscopy</p> <p>UV-VIS Spectrophotometer</p> <p>Ultra-Centrifuge</p> <p>Laminar Flow</p> <p>Portable Surface pH Meter</p>
COMPUTER PROFICIENCY	<p>Microsoft office, Sigma Plot, Origin Pro, R Software, GraphPad Prism, SPSS, & QGIS knowledge of Internet</p>
MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS/SOCIETIES	<p>Life member of Healthcare and Biological Sciences Research Association (HBSRA) Eurasia Research</p> <p>Annual member of India Academy of Environmental Science 2019</p> <p>Annual member of Indian Botanical Society (IBS- 2017), Bareilly, U.P., India</p> <p>Annual member of Indian Science Congress (ISC-2015), Kolkata, W.B., India</p>
PROFESSIONAL ACTIVITIES	<p>Served as a reviewer for:</p> <p>Chemoecology</p> <p>Plant Physiology and Biochemistry</p> <p>Environmental Science and Pollution research</p>
PUBLICATION SUMMARY	<p>Papers in Peer reviewed Journals with Impact Factor: 08</p> <p>Papers in Peer reviewed Journals without Impact Factor: 03</p> <p>Book Chapters Published: 11</p> <p>Conferences & Workshops Attended: 14</p>

PUBLICATIONS,
PRESENTATIONS
AND
WORKSHOPS

Citations to My Articles: Citation indices	(Source: Google Scholar)	
	All	Since 2016
Citations	326	323
h-index	8	8
i10-index	8	8

Publications

1. **Mohd Irfan Naikoo**, Fareed Ahmad Khan, Jörg Rinklebe, Nishanta Rajakaruna, Parvaiz Ahmad (2021). Biotransfer, Bioaccumulation and Detoxification of Nickel along the Soil- Faba bean- Aphid-Ladybird Food chain. **Sci. Total Environ.** 147226 <https://doi.org/10.1016/j.scitotenv.2021.147226> (IF 7.963)
2. **Mohd Irfan Naikoo**, Fareed Ahmad Khan, Fariha Raghieb, Mudasir Irfan Dar, Parvaiz Ahmad (2021). Uptake, Accumulation and Elimination of Cadmium along Soil - Faba bean - Aphid - Ladybird Food Chain. **Chemosphere.** <https://doi.org/10.1016/j.chemosphere.2021.130522> (IF 7.086)
3. **Mohd Irfan Naikoo**, Mudasir Irfan Dar, Fareed Ahmad Khan, Fariha Raghieb, Nishanta Rajakaruna (2019). Trophic transfer and bioaccumulation of lead along soil - plant - aphid - ladybird food chain. **Environ Sci Pollut Res.** 26(23):23460-23470 (IF 4.223)
4. **Mohd Irfan Naikoo**, Fariha Raghieb, Mudasir Irfan Dar, Fareed Ahmad Khan (2019). Response of *Vicia faba* to cadmium toxicity: effect on plant growth, photosynthetic pigments and yield characteristics. **J. Environ. Biosci.** 33(1) ISSN No.0976-3384
5. Fariha Raghieb, **Mohd Irfan Naikoo***, Fareed Ahmad Khan (2020). Interaction of ZnO nanoparticle and AM fungi mitigates Pb toxicity in wheat by upregulating antioxidants and restricted uptake of Pb. **J. Biotechnol.** <https://doi.org/10.1016/j.jbiotec.2020.09.003> (corresponding author) (IF 3.55)
6. Mark A. Sutton, Netty van Dijk, Peter E. Levy, Matthew R. Jones, Sarah Leeson, Y. Sim Tang, Amy Stephens, Christine F. Braban, Ulrike Dragosits, Ian D. Leith, Lucy J. Sheppard, Clare M. Howard, David Fowler, Paul Corbett, **Mohd Irfan Naikoo**, Silvana Munzi and Patricia A. Wolseley (2020). Alkaline Air: changing perspectives on nitrogen and air pollution in an ammonia-rich world. **Phil. Trans. R. Soc. A** 20190315. <http://dx.doi.org/10.1098/rsta.2019.0315> (IF 4.226)
7. Mudasir Irfan Dar, Iain D. Green, **Mohd Irfan Naikoo**, Fareed Ahmad Khan, Abid Ali Ansari, Mohd Iqbal Lone (2017). Assessment of biotransfer and bioaccumulation of cadmium, lead and zinc from fly ash amended soil in mustard-aphid-beetle food chain. **Sci. Total. Environ.** 584-585, pages 1221-1229. (IF 7.963)

8. Mudasir Irfan Dar, Fareed Ahmad Khan, Iain D. Green, **Mohd Irfan Naikoo** (2015). The transfer and fate of Pb from sewage sludge amended soil in a multi-trophic food chain: a comparison with the labile elements Cd and Zn. **Environ. Sci. Pollut. Res.** 22, 16133-16142 (IF 4.223)
9. Mudasir Irfan Dar, **Mohd Irfan Naikoo**, Fareed Ahmad Khan, Iain D. Green (2018). Assessing the Feasibility of Sewage Sludge Applications for the Cultivation of *Brassica Juncea* L.: Metal Accumulation, Growth, Biochemical and Yield Responses. **J. Environ. Sci. Renew. Res.** 1(1):104.
10. Farha Rehman, Fareed A. Khan, **Mohd Irfan Naikoo**, Mudasir Irfan Dar, Fauzia Naushin (2016) Impact of Nickel on the growth of *Lycopersicon esculentum* var. Navodaya. **Int. J. Environ Sci.** 7 (1): 100-106. ISSN No.: 0976-4534
11. Mohd. Asgher, Zebus Sehar, Abdul Rehaman, **Mohd Irfan Naikoo**, Nisar A. Bhat, Mudasir Irfan Dar and Nafees A. Khan (2021) Revisiting Functional Perspectives of Ethylene in Metal Stress Tolerance in Plants. **Physiologia Plantarum** (under review) (IF 4.50)

Book Chapters

12. **Mohd Irfan Naikoo**, Uzma Kafeel, Fauzia Naushin, Fareed Ahmad Khan (2020). Halophytes in India and their Role in Phytoremediation In: Grigore MN. (Ed), Handbook of Halophytes- From Molecules to Ecosystems towards Biosaline Agriculture Springer Nature Switzerland, ISBN: 978-3-030-17854-3
13. Al-Tawaha, Abdel Rahman Mohammad Said, Satybhan Singh, Virendra Singh, Uzma Kafeel, **Mohd Irfan Naikoo**, Aradhna Kumari, Abdel Razzaq Al-Tawaha et al. (2020). Improving Water Use Efficiency and Nitrogen Use Efficiency in Rice Through Breeding and Genomics Approaches. In: Roychoudhury A (Ed), Rice Research for Quality Improvement: Genomics and Genetic Engineering. Pages 307-337. Springer, Singapore, ISBN: 978-981-15-5337-0
14. **Mohd Irfan Naikoo**, Mudasir Irfan Dar, Fariha Raghieb, Bilal Ahmad, Aamir Raina, Fareed Ahmad Khan (2019). Role and regulation of plants phenolics in abiotic stress tolerance: an overview. In: Khan MIR, Reddy PS, Ferrante A, Khan NA (Eds), Plant Signaling Molecules: Role and Regulation under Stressful Environments. Pages 157-168, Elsevier, Woodhead Publishing, ISBN: 9780128164518
15. Bilal Ahmad, Aamir Raina, **Mohd Irfan Naikoo**, Samiullah Khan (2019). Role of methyl jasmonates in salt stress tolerance in crop plants. In: Khan MIR, Reddy PS, Ferrante A, Khan NA (Eds), Plant Signaling Molecules: Role and Regulation under Stressful Environments. Pages 371-384, Elsevier, Woodhead Publishing, ISBN: 9780128164518
16. Mudasir Irfan Dar, **Mohd Irfan Naikoo**, Iain D. Green, Nusrat Sayeed, Barkat Ali, Fareed Ahmad Khan (2019). Heavy Metal Hyperaccumulation and Hypertolerance in Brassicaceae: Responses, Tolerance and Remediation. In:

Hasanuzzaman M, Nahar K, Fujita M (Eds), Plants Under Metal and Metalloid Stress. Pages 263-276, Springer Verlag, Singapore, ISBN: 978-981-13-2242-6

17. Bilal Ahmad, **Mohd Irfan Naikoo**, Hassan Jaleel, Asfia Shabbir, Farha Rehman, Yawar Sadiq, and M. Masroor Akhtar Khan (2017). Signaling Pathways of Anticancer Plants: Action and Reaction. In: Akhtar MS, Swamy MK (Eds), Anticancer Plants: Clinical Trials and Nanotechnology Volume 3. Pages 303-322, Springer Nature Singapore, ISBN 978-981-10-8216-0
18. Mudasir Irfan Dar, **Mohd Irfan Naikoo**, Fareed Ahmad Khan, Farha Rehman, Fauzia Naushin, Iain D. Green, Abid Ali Ansari (2017). An Introduction to Reactive Oxygen Species Metabolism under Changing Climate in Plants. In: Khan MIR, Khan NA (Eds), Reactive Oxygen Species and Antioxidant Systems in Plants: Role and Regulation under Abiotic Stress. Pages 25-52, Springer Verlag, New York ISBN: 978-981-10-5254-5
19. **Mohd Irfan Naikoo**, Mudasir Irfan Dar, Fareed Ahmad Khan, Abid Ali Ansari, Farha Rehman, Fauzia Naushin, (2017). Gymnosperm diversity of Kashmir Himalayas. In: Ansari AA, Gill SS (Eds), Plant biodiversity: Monitoring, Assessment and Conservation. Pages 228-238, CAB International UK, ISBN: 9781780646947
20. Abid Ali Ansari, Sulaiman Al-Ghanim, Subrata Trivedi, Shalini Saggu, Hasibur Rehman, Mohammed M Moawed, Zahid Khorshid Abbas, Mudasir Irfan Dar, **Mohd Irfan Naikoo** (2017). Aquatic Plant Biodiversity: A Biological Indicator for the Monitoring and Assessment of Water Quality. In: Ansari AA, Gill SS (Eds), Plant Biodiversity: Monitoring, Assessment and Conservation. Pages 218-227, CABI International UK, ISBN: 9781780646947
21. Mudasir Irfan Dar, **Mohd Irfan Naikoo**, Farha Rehman, Fauzia Naushin, Fareed Ahmad Khan (2016). Proline accumulation in plants: roles in stress tolerance and plant development. In: Iqbal N, R Nazar, Khan NA (Eds), Osmolytes and plant acclimation to changing environment: emerging omics technologies. Pages 155-166, Springer Verlag, New York, ISBN:978-81-322-2616-1
22. Mudasir Irfan Dar, Fareed Ahmad Khan, Farha Rehman, Ather Masoodi, Abid Ali Ansari, Deepshikha Varshney, Fauzia Naushin, **Mohd Irfan Naikoo** (2015). Roles of Brassicaceae in Phytoremediation of Metals and Metalloids. In: Ansari AA et al. (Eds), Phytoremediation: Management of environmental contaminants, vol-1. Pages 201-215, Springer International Publishing, Switzerland, ISBN:978-3-319-10395-2

Conference Presentations and Abstracts Published

1. Mohd Irfan Naikoo and Fareed Ahmad Khan. "Assessment of biotransfer and bioaccumulation of cadmium from heavy metal treated soil in a broad bean-aphid-ladybird food chain. International Conference on "Global Water Crisis: Agriculture and Food Security in the Era of Climate Change 1-3 December 2018. Department of Geography, Aligarh Muslim University, Aligarh
2. Mohd Irfan Naikoo, Mudasir Irfan Dar, Fariha Raghieb and Fareed Ahmad Khan. Biotransfer and bioaccumulation of cadmium lead and zinc from fly ash amended soil in mustard-aphid-beetle food chain. Third International

Conference on Bioresource and Stress Management 8-11th November, 2017 at SIAM Jaipur, Rajasthan, India

3. Mohd Irfan Naikoo, Mudasir Irfan Dar, Fariha Raghieb and Fareed Ahmad Khan. Biotransfer of cadmium, lead and zinc from fly ash amended soil in Plant-arthropod food chain. International Conference on Advances in Agricultural and Biodiversity Conservation for Sustainable Development (ABCD-2017) 27-28, October, 2017 at C. C. S. University, Meerut, Uttar Pradesh
4. Mohd Irfan Naikoo, Fareed Ahmad Khan, Mudasir Irfan Dar, Fariha Raghieb and Fauzia Naushin. Biotransfer of cadmium along a soil-plant-aphid- ladybird food chain. XXXX All India Botanical Conference and National Symposium on "Evaluation and Conservation of Plant Germplasm" 15-17, September, 2017 at Department of Botany, Punjabi University, Patiala
5. Mohd Irfan Naikoo, Mudasir Irfan Dar, Fariha Raghieb and Fareed Ahmad Khan. Studies on the biomagnification of copper and lead from heavy metal amended soil in a multi-trophic food chain. International Conference on Strategies for Environmental Protection and Management (ICSEPM), 11-13, December, 2016. JNU Convention Centre New Delhi, India
6. Mohd Irfan Naikoo, Mudasir Irfan Dar, Farha Rehman and Fareed Ahmad Khan. Studies on the Uptake and Accumulation of Cadmium and Nickel in a Broad Bean-Aphid-Ladybird Food Chain. National Seminar on "Advances in Plant Science Frontier: Development and Environment" (APSFDE) 26-27 November, 2016 at Department of Botany Gandhi Faiz-e-Aam College, Shahjahanpur (Affiliated with MJP Rohilkhand University, Bareilly, U.P. India)
7. Mohd Irfan Naikoo, Mudasir Irfan Dar, Farha Rehman and Fareed Ahmad Khan. Uptake and Accumulation of Cadmium and Zinc from Heavy Metal treated Soil in a Broad Bean-Aphid-Ladybird Food Chain. National Conference on Food Security Issues and Environmental Challenges For Indian Agriculture In The Next Decades and XXIX Annual Conference of National Environmental Science Academy on 19-20 November, 2016 at University Auditorium, Panjab University Chandigarh
8. Mohd Irfan Naikoo, Mudasir Irfan Dar and Fareed Ahmad Khan. Biotransfer of Cadmium and Zinc from Heavy metal treated Soil in Broad Bean-Aphid-ladybird Food Chain. National Conference on "Monitoring and Management of Drinking Water Quality (MMDWQ)" & XXVIII Annual Conference of National Environmental Science Academy (NESA), 21-23, December, 2015, Uttarakhand State Council for Science and Technology (UCOST), Vigyan Dham, Jhajra, Dehradun, India
9. Mudasir Irfan Dar, Fareed Ahmad Khan, Mohd Irfan Naikoo. Biotransfer of Cd & Zn from sewage sludge amended soil to mustard-aphid-beetle food chain. Fifth International Conference on Plants & Environmental Pollution (ICPEP-5), 24-27 February 2015, CSIR-National Botanical Research Institute, Lucknow, India
10. Mohd Irfan Naikoo, Mudasir Irfan Dar, Fareed Ahmad Khan, Farah Rehman, Tabassum Jahan. Effects of fly ash amendments on heavy metal accumulation,

growth and yield responses of some selected vegetable crops. 102nd Indian Science Congress, 3-7 Jan 2015, University of Mumbai

11. Mudasir Irfan Dar, Mohd Irfan Naikoo, Fareed Ahmad Khan, Mehtab Fatima. Metal accumulation, growth and yield responses of some underground vegetable crops grown in fly ash amended soil. 102nd Indian Science Congress, 3-7 Jan 2015, University of Mumbai
12. Mudasir Irfan Dar, Farha Rehman, Fareed Ahmad Khan, Mohd Irfan Naikoo. Effects of Sewage Sludge Amended Soil on Insect Populations. National Conference on Waste Disposal and its Effect on Biodiversity, Nov 15-16, 2014, Mohammad Ali Jauhar University, Jauhar Nagar Rampur, Uttar Pradesh
13. Farha Rehman, Mudasir Irfan Dar, Fareed Ahmad Khan, Mohd Irfan Naikoo. Evaluation of aphid infestation levels in some cultivars of Indian mustard. National Conference on Waste Disposal and its Effect on Biodiversity, Nov 15-16, 2014, Mohammad Ali Jauhar University, Jauhar Nagar Rampur, Uttar Pradesh

Workshops and Seminars attended

1. International Conference on "Global Water Crisis: Agriculture and Food Security in the Era of Climate Change" during 1-3 December 2018. Department of Geography, Aligarh Muslim University, Aligarh
2. Biospark - All India Life Science Fest, 21-22 February 2018 at Aligarh Muslim University, Aligarh
3. Third International Conference on Bioresource and Stress Management 8-11th November, 2017. SIAM Jaipur, Rajasthan, India
4. International Conference on Advances in Agricultural and Biodiversity Conservation for Sustainable Development (ABCD-2017) 27-28, October, 2017. C. C. S. University, Meerut, Uttar Pradesh
5. XXXX All India Botanical Conference and National Symposium on "Evaluation and Conservation of Plant Germplasm" 15-17, September, 2017. Department of Botany, Punjabi University, Patiala
6. Workshop on "Challenges and opportunities for agricultural nitrogen in India" organized by India- United Kingdom virtual joint centers (NEWS, INEW, CINTRIN and IUNFC). National Academy of Agricultural Sciences National Agricultural Science Complex (NASC), New Delhi 110012
7. International Conference on Strategies for Environmental Protection and Management (ICSEPM), 11-13, December, 2016. JNU Convention Centre New Delhi, India
8. National Seminar on "Advances in Plant Science Frontier: Development and Environment" (APSFDE) 26-27 November, 2016 Department of Botany Gandhi Faiz-e-Aam College, Shahjahanpur (Affiliated with MJP Rohilkhand University, Bareilly, U.P. India)

9. Food Security Issues and Environmental Challenges For Indian Agriculture In The Next Decades and XXIX Annual Conference of National Environmental Science Academy on 19-20 November, 2016 at University Auditorium, Panjab University Chandigarh
10. National Conference on “Monitoring and Management of Drinking Water Quality (MMDWQ)” & XXVIII Annual Conference of National Environmental Science Academy (NESA), 21-23, December 2015, Uttarakhand State Council for Science and Technology (UCOST), Vigyan Dham, Jhajra, Dehradun, India
11. Workshop on “Understanding Statistics by MS-EXCEL and SPSS-2015”, Nov. 23-30, 2015, Banaras Hindu University, Varanasi, India
12. 102nd Indian Science Congress, 3-7 Jan 2015, University of Mumbai
13. ALIGARH NANO-4 - an International Conference on Nanoscience and Nanotechnology, (March 8-10, 2014), Aligarh Muslim University, Aligarh
14. National Seminar on “Environmental pollution and its effects” held on February 28- March 1st, 2014 at SRM Gupta Govt. PG College, Chharrah, Aligarh

PERSONAL DETAILS

Father's Name : Gh. Rasool Naikoo
 Mother's Name : Shaheena Akther
 Date of Birth : 17-08-1986
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Google Scholar: <https://scholar.google.co.in/citations?user=PxQJq8QAAAAJ&hl=en>

Researchgate: https://www.researchgate.net/profile/Mohammad_Irfan10

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**PROFESSIONAL
REFERENCES**

Dr. Mark A Sutton

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Chair of the International Nitrogen Initiative
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Bush Estate, Penicuik, Midlothian EH26 0QB.
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Declaration

I hereby declare that all the above information furnished by me is true to the best of my knowledge.

Mohd Irfan Naikoo