



Botany Section
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DR MOHAMMAD FAIZAN | Assistant Professor (Guest Faculty)

CURRENT DESIGNATION/ INVOLVEMENT Currently working as an **Assistant Professor** (Guest Faculty) in Department of Botany, School of Sciences, Maulana Azad National Urdu University (Central University), Hyderabad, Telangana, India.

AREA OF SPECIALIZATION Abiotic Stress Tolerance
Plant Physiology
Agricultural Biotechnology

ONGOING ACADEMIC RESEARCH/PROJECTS

INNOVATION WITH FIELD OF STUDY AND COLLABORATIVE EFFORTS Working in Collaboration with Nanjing Forestry University, China
King Saud University, Saudi Arabia
University of Bialystok, Poland
Nanjing Agricultural University, China
Southern Federal University, Russia
Stony Brook University, USA

ACADEMIC AND ADMINISTRATIVE EXPERIENCE

- **IN TEACHING AND RESEARCH FOR MORE THAN 9 YEARS**
- **TEACHING BOTANY TO UG STUDENTS**
- **MEMBER OF BOARD OF SRUDIES, BOTANY**

EDUCATIONAL QUALIFICATION

- **POSTDOC (PDF)**
Nanjing Forestry University, China
- **DOCTOR OF PHILOSOPHY (Ph.D.), 2018**
Department of Botany, Aligarh Muslim University

ARS-NET QUALIFIED

TEACHING PROFICIENCY

RESEARCH PUBLICATION DETAILS

1. Bhat, J.A.†, **Faizan, M.†**, Bhat, M.A., Huang, F., Yu, D., Ahmad, A., Bajguz, A and Ahmad, P **(2022)**. Defense interplay of the zinc-oxide nanoparticles and melatonin in alleviating the arsenic stress in soybean (*Glycine max* L.). **Chemosphere** 288: 132471.

2. Faraz, A., **Faizan, M.**, Hayat, S and Alam, P (2022). Foliar application of copper oxide nanoparticles increases the photosynthetic efficiency and antioxidant activity in *Brassica juncea*. **Wiley/Hindawi, Journal of Food Quality** 2022.
3. **Faizan, M.**, Bhat, J.A., Noureldeen, A., Ahmad, P and Yu, F (2021). Zinc oxide nanoparticles and 24-Epibrassinolide alleviates Cu toxicity in tomato by regulating ROS scavenging, stomatal movement and photosynthesis. **Ecotoxicology and Environmental Safety** 218: 112293.
4. **Faizan, M.**, Rajput, V.D., Al-Khuraif, A.A., Arshad, M., Minkina, T., Sushkova, S and Yu, F (2021). Effect of foliar fertigation of chitosan nanoparticles on cadmium accumulation and toxicity in *Solanum lycopersicum*. **Biology** 10: 666.
5. **Faizan, M.**, Bhat, J.A., Hessini, K., Yu, F and Ahmad, P (2021). Zinc oxide nanoparticles alleviates the adverse effects of cadmium stress on *Oryza sativa* via modulation of the photosynthesis and antioxidant defense system. **Ecotoxicology and Environmental Safety** 220: 112401.
6. **Faizan, M.**, Bhat, J.A., Chen, C., Alyemeni, M.N., Wijaya L., Ahmad, P and Yu, F (2021). Zinc oxide nanoparticles (ZnO-NPs) induce salt tolerance by improving the antioxidant system and photosynthetic machinery in tomato. **Plant Physiology and Biochemistry** 161: 122-130.
7. **Faizan, M.**, Sehar, S., Rajput, V.D., Faraz, A., Afzal, S., Minkina, T., Sushkova, S., Adil, M.F., Yu, F., Alatar, A.A., Akhter, F and Faisal, M (2021). Modulation of cellular redox status and antioxidant defense system after synergistic application of zinc oxide nanoparticles and salicylic acid in rice (*Oryza sativa*) plant under arsenic stress. **Plants** 10: 2254.
8. **Faizan, M.**, Yu, F., Rajput, V.D., Minkina, T., Hayat, S (2021). Zinc oxide nanoparticles to fight the COVID-19. **Acta Scientific Agriculture** 5: 14-16.
9. **Faizan, M.**, Faraz, A., Bhat, J.A., Hayat, S and Yu, F (2021). Zinc oxide nanoparticles and epibrassinolide enhance growth through the modulation of antioxidant enzymes activity and photosynthetic performance in *Lycopersicon esculentum*. **BIOCELL** 45(4): 1081-1093.
10. Bhat, U.H., Sami, F., Siddiqui, H., **Faizan, M.**, Faraz, A and Hayat, S (2021).

- Nitric oxide alleviates zinc oxide nanoparticles-induced phytotoxicity in *Brassica juncea* plants. ***Russian Journal of Plant Physiology*** 68: 559-568.
11. Rajput, V.D., Minkina, T., Kumari, A., Shende, S.S., Ranjan, A., **Faizan, M.**, Barakvov, A., Gromovik, A., Gorbunova, N., Rajput, P., Singh, A., Khabirov, I., Nazarenko, O., Sushkova, S and Kizilkaya, R (2021). A review on nanobioremediation approaches for restoration of contaminated soil. ***Eurasian Journal of Soil Science*** 2022, 11.
 12. **Faizan, M.**, Yu, F., Chen, C., Faraz, A and Hayat, S (2020). Zinc oxide nanoparticles help to enhance plant growth and alleviate abiotic stress: A review. ***Current Protein & Peptide Science*** 21: 1-15.
 13. **Faizan, M.**, Faraz, A., Mir, A.R and Hayat, S (2020). Role of zinc oxide nanoparticles in countering negative effects generated by cadmium in *Lycopersicon esculentum*. ***Journal of Plant Growth Regulation*** 40: 101-115.
 14. **Faizan, M.**, Faraz, A., Sami, F., Siddiqui, H., Yusuf, M., Gruszka, D and Hayat, S (2020). Role of strigolactones: Signalling and crosstalk with other phytohormones. ***Open Life Sciences*** 15: 217-228.
 15. Mir, A.R., **Faizan, M.**, Bajguz, A., Sami, F., Siddiqui, H and Hayat, S (2020). Occurrence and biosynthesis of melatonin and its exogenous effect on plants. ***Acta Societatis Botanicorum Poloniae*** 89: 1-23.
 16. Khatoon, H., Yusuf, M., **Faizan, M.**, Siddiqui, H and Hayat, S (2020). Auxins increase the efficiency of 24-epibrassinolide to promote growth, photosynthesis and antioxidant system in *Vigna radiata*. ***International Journal of Plant Biology & Research*** 8(1): 11-18.
 17. **Faizan, M.**, Faraz, A and Hayat, S (2019). Effective use of zinc oxide nanoparticles through root dipping on the performance of growth, quality, photosynthesis and antioxidant system in tomato. ***Journal of Plant Biochemistry and Biotechnology*** 29(3): 553-567.
 18. **Faizan, M** and Hayat, S (2019). Effect of foliar spray of ZnO-NPs on the physiological parameters efficiency and antioxidant systems of *Lycopersicon esculentum*. ***Polish Journal of Natural Sciences*** 34(1): 87-105.
 19. Faraz, A., **Faizan, M.**, Sami, F., Siddiqui, H and Hayat, S (2019).

- Supplementation of salicylic acid and citric acid for alleviation of cadmium toxicity to *Brassica Juncea*. ***Journal of Plant Growth Regulation*** 39: 641-655.
20. Faraz, A., **Faizan, M.**, Sami, F., Siddiqui, H., Pichtel, J and Hayat, S (2019). Nanoparticles: biosynthesis, translocation and role in plant metabolism. ***IET Nanobiotechnology*** 13(4): 345-352.
 21. Hasan, S., **Faizan, M** and Hayat, S (2019). Effect of modes of application of nitric oxide on the growth and physiological performance of Indian mustard. ***Journal of Plant Science Research*** 35(1): 45-53.
 22. **Faizan, M.**, Faraz, A., Yusuf, M., Khan, S.T and Hayat, S (2018). Zinc oxide nanoparticle-mediated changes in photosynthetic efficiency and antioxidant system of tomato plants. ***Photosynthetica*** 56 (2): 678-686.
 23. **Faizan, M.**, Faraz, A and Hayat, S (2018). Dose dependent response of epibrassinolide on the growth, photosynthesis and antioxidant system of tomato plants. ***Indian Horticulture Journal*** 8(2): 68-76.
 24. Siddiqui, H., Yusuf, M., Faraz, A., **Faizan, M.**, Sami, F and Hayat, S (2018). 24-Epibrassinolide supplemented with silicon enhances the photosynthetic efficiency of *Brassica juncea* under salt stress. ***South African Journal of Botany*** 118: 120-128.
 25. Sami, F., **Faizan, M.**, Faraz, M., Siddiqui, H., Yusuf, M and Hayat, S (2018). Nitric oxide-mediated integrative alterations in plant metabolism to confer abiotic stress tolerance, NO crosstalk with phytohormones and NO-mediated post translational modifications in modulating diverse plant stress. ***Nitric Oxide*** 73: 22-38.
 26. **Faizan, M.**, Faraz, A., Sami, F., Siddiqui, H and Hayat, S (2018). Role of Nanoparticles in Plants under Changing Circumstances. ***Journal of Biological and Chemical Research*** 35(1): 1-11.
 27. **Faizan, M.**, Faraz, A and Hayat, S (2018). Evaluation of the effects of silver and zinc-oxide nanoparticles on the germination of *Lycopersicon esculentum*. ***Journal of Research & Development*** 18: 2018.
 28. Faraz, A., **Faizan, M** and Hayat, S (2018). Effects of Copper Oxide Nanoparticles on the Photosynthesis and Antioxidant levels of Mustard Plants (*Brassica juncea*). ***Journal of Biological and Chemical Research***

- 35(2): 418 – 426.
29. Faraz, A., **Faizan, M** and Hayat, S (2018). Effects of silver and copper oxide nanoparticles on the germination indices of *Brassica juncea* seeds. ***Journal of Research & Development*** 18: 2018.
 30. **Faizan, M.**, Faraz, A., Sami, F., Siddiqui, H and Hayat, S (2017). Brassinosteroids: A New Plant Growth Regulator. ***Journal of Biological and Chemical Research*** 34(2): 908-917.
 31. Wani, A.S., Faraz, A., **Faizan, M.**, Ahmad, A., Hayat, S and Tahir, I (2017). Foliar Spray of Proline Enhanced the Photosynthetic Efficiency and Antioxidant System in *Brassica juncea*. ***Notulae Botanicae Horti Agrobotanici Cluj-Napoca*** 45 (1): 112-119.
 32. Sami, F., Yusuf, M., **Faizan, M.**, Faraz, A and Hayat, S (2016). Role of sugars under abiotic stress. ***Plant Physiology and Biochemistry***, 109: 54-61.
 33. Alyemni, M.N., Hayat, Q., Hayat, S., **Faizan, M** and Faraz, A (2016). Exogenous proline application enhances the efficiency of nitrogen fixation and assimilation in chickpea plants exposed to cadmium. ***Legume Research***, 39 (2): 221-227.

BOOK CHAPTERS

1. **Faizan, M.**, Arif, Y., Rajput, V.D., Hayat, S., Minkina, T., Ahmed, S.M. and Yu, F (2021). Effects, uptake and translocation of Iron (Fe) based nanoparticles in plants. Toxicity of Nanoparticles in Plants: An Evaluation of Cyto/Morpho-physiological, Biochemical and Molecular Responses. ***Elsevier***.
2. **Faizan, M.**, Yu, F., Rajput, V.D., Minkina, T. and Hayat, S (2021). Role of brassinosteroids in protein folding under high temperature stress. Brassinosteroids Signalling: Intervention with phytohormones and their relationship in plant adaptation to abiotic stresses. ***Springer Nature Singapore***.
3. **Faizan, M.**, Hussain, A., Mir, A.R., Rajput, V.D., Minkina, T. and Hayat, S (2021). Effect of carbon nanotubes on abiotic stress response in plants: An overview. Sustainable Agriculture Reviews 53, Nanoparticles: A new

- tool to enhance stress tolerance. *Springer Nature Switzerland*.
4. **Faizan, M.**, Chen, C., Ahmad, L., Rajput, V.D., Minkina, T. and Yu, F (2021). Nanotechnology in agriculture. Advanced Crop Improvement - Application of Molecular Approaches to Classical Genetics, *Springer Nature Switzerland*.
 5. Faraz, A., **Faizan, M.** and Hayat, S (2021). Functional value-added finishing of textile substrates using nanotechnology- A review. Emerging Technologies for Textile Coloration. *CRC Press, Taylor & Francis Group, New York*.
 6. Yusuf, M., Khan, M.T.A., **Faizan, M.**, Khalil, R. and Fariduddin, Q (2021). Role of brassinosteroids and its cross talk with other phytohormones in plant responses to heavy metal stress. Brassinosteroids Signalling: Intervention with phytohormones and their relationship in plant adaptation to abiotic stresses. *Springer Nature Singapore*.
 7. Muntha, S., **Faizan, M.**, Mehreen, S. and Shareen (2021). Exploring nanotechnology to reduce stress: mechanism of nanomaterial mediated alleviation. Sustainable Agriculture Reviews 53, Nanoparticles: A new tool to enhance stress tolerance. *Springer Nature Switzerland*.
 8. **Faizan, M.**, Hayat, S and Pichtel, J (2020). Effects of zinc oxide nanoparticles on crop plants: A perspective analysis. Sustainable Agriculture Reviews 41, Nanotechnology for Plant Growth and Development: Nanotechnology for Plant Growth and Development, *Springer Nature Switzerland*.
 9. Faraz, A., **Faizan, M.**, Fariduddin, Q and Hayat, S (2020). Response of titanium nanoparticles to plant growth: Agricultural perspective. Sustainable Agriculture Reviews 41, Nanotechnology for Plant Growth and Development: Nanotechnology for Plant Growth and Development, *Springer Nature Switzerland*.
 10. Siddiqui, H., Sami, F., **Faizan, M.**, Faraz, A and Hayat, S (2019). Brassinosteroid mediated regulation of photosynthesis in plants. Brassinosteroids: Plant Growth and Development, *Springer Singapore*.
 11. Yusuf, M., Fariduddin, Q., Khan, T.A., **Faizan, M.**, Faraz, A (2019). Interplay between antioxidant enzymes and brassinosteroids in control

of plant development and stress tolerance. *Brassinosteroids: Plant Growth and Development*, **Springer Singapore**.

12. Hayat, S., Faraz, A and **Faizan, M (2017)**. *Root Exudates: Composition and Impact on Plant-Microbe Interaction. Biofilms in Plants and Soil Health*, **John Wiley & Sons**, Ltd, Chichester, UK.

EDITED BOOK

1. **Faizan, M.**, Hayat, S. and Yu, F **(2022)**. *Sustainable Agriculture Reviews 53, Nanoparticles: A New Tool to Enhance Stress Tolerance (2021)*. **Springer Nature Switzerland** (ISBN 3030868753, 9783030868758).
2. Hayat, S., Pichtel, J., **Faizan, M.** and Fariduddin, Q **(2020)**. *Sustainable Agriculture Reviews 41, Nanotechnology for Plant Growth and Development: Nanotechnology for Plant Growth and Development (2020)*. Springer Nature Switzerland (ISBN 978-3-030-33996-8).

DETAILS OF
CONFERENCE/SEMINAR
/WORKSHOP/ FDP
(ATTENDED/PRESENTED)

Faizan, M., Faraz, A and Hayat, S **(2019)** “**Effect of zinc oxide nanoparticles through root dipping on the performance of *Lycopersicon esculentum*”**. In Golden Jubilee National Symposium on Current Interventions to Plants and Microbes for Environmental & Agricultural Sustainability (CIPME-2019), organized by Guru Nanak Dev University, Amritsar (Punjab).

Faizan, M., Ahmad Faraz and Shamsul Hayat (2017) “**Effect of epibrassinolide on the growth, photosynthesis and antioxidant system of tomato plants**”. In NATIONAL CONFERENCE OF PLANT PHYSIOLOGY – 2017, Emerging Role of Plant Physiology for Food Security and Climate Resilient Agriculture, 23 – 25, November 2017, organized by Department of Plant Physiology, Indira Gandhi Krishi Vishwavidyalaya, Raipur and Indian Society for Plant Physiology, New Delhi.

Faizan, M and Shamsul Hayat (2016) “**Foliar application of zinc oxide nano-particles in tomato plants: an approach to enhanced photosynthesis and antioxidant system**”. In NATIONAL CONFERENCE OF PLANT PHYSIOLOGY – 2016, Challenges in Crop Physiology Research: from Molecular to Whole Plant, 8 – 10, December 2016, organized by Department of Crop Physiology, University of Agricultural Sciences, Bengaluru and Indian

Society for Plant Physiology, New Delhi, India.

Faizan, M., Arif Shafi Wani and Shamsul Hayat (2016) **“Role of epibrassinolide and proline in the alleviation of salt-induced inhibition of photosynthetic capacity through antioxidant system”**. In National seminar on “Advances in Plant Science Frontier: Development and Environment” (APSF-2016), 26th & 27th November, 2016, organized by Department of Botany Gandhi Faiz-e-Aam College, Shahjahanpur, U.P., India.

Faizan, M., Ahmad Faraz, Mohammad Yusuf and Shamsul Hayat (2016) **“Zinc nano-particle can act as a micronutrient for the tomato plants”**. In International conference on “NANOTECHNOLOGY & STEM-ER March 12-15, 2016” organized by Department of Applied Physics, Z.H. College of engineering & Technology, Aligarh Muslim University Aligarh, India.

National Workshop on Research Methodology from 5th – 11th February, 2018 organized by Dr. B. R. Ambedkar Hall, Aligarh Muslim University, Aligarh – India.

International Workshop on **“Gene Cloning and Expression of Recombinant Protein”** from December 12 – 15, 2017 organized by South Asian University, Akbar Bhawan, Chanakyapuri, New Delhi, India.

One day workshop in **“Mendeley”** on 25th February, 2018 organized by Computer Center, Aligarh Muslim University, Aligarh.

One Day Workshop on **“Intellectual Property Rights for Academic Institutions”** on 26th August, 2017 organized by Mechanical Engg. Section, University Polytechnic, Aligarh Muslim University, Aligarh.

Two days workshop on **“Writing Skills”** on 15th and 16th September 2017 organized by Club for Short Evening Courses, Cultural Education Center, Aligarh Muslim University, Aligarh.

DETAILS OF KEYNOTE
SPEAKER/RESOURCE
PERSON/ SESSION CHAIR

ETC.

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- | | |
|-------------|---|
| ACHIVEMENTS | <ol style="list-style-type: none">1. Editorial Board Member of Several Journals2. Total Citation is more than 8503. Total i10 index is 15 |
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DETAILS OF SUPERVISION
(M.PHIL/M.TECH/P.HD.)

PROFESSIONAL MEMBERSHIPS

PERSONAL DETAILS	Father's Name	: Mr. Shakeel Ahmad
	Date of Birth	: 30-08-1990
	Gender	: Male
	Marital Status	: Unmarried
	Nationality	: Indian
	Language Known	: Urdu, Hindi, English.

Date: 18-4-2022

Place: Hyderabad

(Dr Mohammad Faizan)