

**Dr. Vivek Pandey**

Senior Principal Scientist & Head,  
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&

Professor, Academy of Council of Scientific and Innovative Research (AcSIR)  
CSIR-National Botanical Research Institute, Lucknow 226001, India

More than 32 years of research experience in abiotic stress biology including metal and drought stress and climate change. Published 49 research papers in international peer reviewed journals. Contributed 7 chapters in books published by Kluwer, John Wiley, Springer and Elsevier Sciences. Supervised four Ph.D. thesis, three students are writing their thesis and 7 more are working under my supervision. One of my students got Ph.D. from University of Eastern Finland. Attended and delivered lectures in international conferences in Czech Republic, Denmark, Finland, China and USA. Recipient of CSIR-DAAD fellowship. Visiting researcher to University of Eastern Finland for one year. Member of 17<sup>th</sup> Indian Scientific Expedition to Antarctica. Teaching students registered for Ph.D. at AcSIR. Course coordinator of the course “Climate Change and Plants”.

**Selected Publications**

1. Pandey V, Dixit V, & R Shyam. 2005. Antioxidative responses in relation to growth of mustard (*Brassica juncea* cv. Pusa Jaikisan) plants exposed to hexavalent chromium. *Chemosphere* 61: 40-47.
2. Pandey V, Dixit V & R Shyam. 2009. Chromium (VI) induced changes in growth and root plasma membrane redox activities in pea plants. *Protoplasma* 235: 49-55.
3. Pandey V, Dixit, V, Shyam R.2009. Chromium effect on ROS generation and detoxification in pea (*Pisum sativum*) leaf chloroplasts. *Protoplasma*, 2009: **236**:85–95.
4. Pandey V, Ranjan S, Deeba F, Pandey AK, Singh R, Shirke PA, Pathre UV. 2010. Desiccation-induced physiological and biochemical changes in resurrection plant, *Selaginella bryopteris*. *Journal of Plant Physiology* 167: 1351-1359.
5. Deeba F, Pandey AK, Ranjan S, Mishra A, Singh R, Sharma YK, Shirke PA, Vivek Pandey. 2012. Physiological and proteomic responses of cotton (*Gossypium herbaceum* L.) to drought stress. *Plant Physiol. Biochem.* 53: 6-18. doi:10.1016/j.plaphy.2012.01.002.
6. Oksanen E, Vivek Pandey, A. K. Pandey, S. Keski-Saari, S. Kontunen-Soppela, C. Sharma. 2013. Impacts of increasing ozone on Indian plants. *Environ Poll* 177, 189-200.
7. Pandey AK, Majumder B, Keski-Saari S, Kontunen-Soppela S, Pandey Vivek, Oksanen E. 2014. Differences in responses of two mustard cultivars to ethylenediurea (EDU) at high

ambient ozone concentrations in India. *Agriculture, Ecosystems and Environment* 196: 158–166.

8. Pandey AK, Majumder B, Keski-Saari S, Kontunen-Soppela S, Mishra A, Sahu N, Pandey V, Oksanen E. 2015. Searching for common responsive parameters for ozone tolerance in 18 rice cultivars in India: results from ethylenediurea studies. *Science of the Total Environ.* 532:230–238.
9. Deeba F, Pandey AK and Pandey V (2016). Organ specific proteomic dissection of *Selaginella bryopteris* undergoing dehydration and rehydration. *Front. Plant Sci.* 7:425. doi:10.3389/fpls.2016.00425.
10. Sharma M, Gupta SK, Majumder B, Maurya VK, Deeba F, Alam A, Pandey Vivek. 2017. Salicylic acid mediated growth, physiological and proteomic responses in two wheat varieties under drought stress. *Journal of Proteomics.* 163: 28-51.
11. Pandey, V., Sharma, M., Deeba, F., Maurya, V.K., Gupta, S.K., Singh, S.P., Mishra, A. and Nautiyal, C.S. 2017. Impact of elevated CO<sub>2</sub> on wheat growth and yield under Free Air CO<sub>2</sub> Enrichment. *American Journal of Climate Change*, 6, 573-596.
12. Gupta SK, Sharma M, Majumder B, Maurya VK, Lohani M, Deeba F, Vivek Pandey. 2018. Impact of ethylene diurea (EDU) on growth, yield and proteome of two winter wheat varieties under high ambient ozone phytotoxicity. *Chemosphere* 196:161-173.
13. Sharma M, Gupta SK, Majumder B, Maurya VK, Deeba F, Alam A, Pandey Vivek. 2018. Proteomics unravel the regulating role of salicylic acid in soybean under yield limiting drought stress. *Plant Physiol Biochem* 130:529-541. doi: 10.1016/j.plaphy.2018.08.001
14. Mishra A, Singh SP, Mahfooz S, Shukla R, Mishra N, Pandey S, Dwivedi S, Vivek Pandey, Shirke PA, Nautiyal CS. 2019. External supplement of impulsive micromanager trichoderma helps in combating CO<sub>2</sub> stress in rice grown under FACE. *Plant Mol Biol Reporter*. <https://doi.org/10.1007/s11105-018-1133-8>.
15. Pandey AK, Majumder B, Keski-Saari S, Kontunen-Soppela S, Vivek Pandey and Oksanen E. 2019. High variation in resource allocation strategies among 11 Indian wheat (*Triticum aestivum*) cultivars growing in high ozone environment. *Climate* 7, 23; doi:10.3390/cli7020023.
16. Prateeksha, B.R. Singh, V.K. Gupta, F. Deeba, R. Bajpai, V. Pandey, A.H. Naqvi, D.K. Upreti, Nicholas Gathergood, Yueming Jiang, Hesham A. El Enshasy, Abeer Hashem, Elsayed Fathi Abd Allah, Essam Nageh Sholkamy, Ashraf A. Mostafa and B.N. Singh. 2019. Non-toxic and ultra small biosilver nanoclusters trigger apoptotic cell death in fluconazole-resistant *Candida albicans* via Ras signalling. *Biomolecules* 9, 47; doi:10.3390/biom9020047.
17. Singh A.K., Rai A, Kushwaha M, Chauhan P.S., Vivek Pandey, Singh N. 2019. Tree growth rate regulate the influence of elevated CO<sub>2</sub> on soil biochemical responses under tropical condition. *Journal of Environmental Management* 231:1211-1221. .

### **Book Chapters**

1. Pandey Vivek, E. Oksanen, N Singh, C Sharma. 2013. Impacts of Air Pollution and Climate change on plants: Implications for India. In: “Climate Change, Air Pollution and Global Challenges: Understanding and Solutions from Forest Research” Eds. Matyssek R, Clarke N, Cudlin P, Mikkelsen TN, Tuovinen J-P, Wieser G, Paoletti E., pp 391-410, Elsevier Sciences.
2. Pandey Vivek, E. Oksanen, N Singh, C Sharma. 2013. Impacts of Air Pollution and Climate change on plants: Implications for India. In: “Climate Change, Air Pollution and Global Challenges: Understanding and Solutions from Forest Research” Eds. Matyssek R, Clarke N, Cudlin P, Mikkelsen TN, Tuovinen J-P, Wieser G, Paoletti E., pp 391-410, Elsevier Sciences.

3. Gupta S.K., Sharma M, Deeba F, Pandey V. 2017. Plant Response: UV-B Avoidance Mechanisms. In : UV-B Radiation: From Environmental Stressor to Regulator of Plant Growth, First Edition. Eds V.P. Singh, S. Singh, S.M. Prasad, P. Parihar. John Wiley & Sons Ltd, pp 217-258.
4. Sharma M, Gupta S.K, Deeba F, Pandey V. 2017. Effects of Reactive Oxygen Species on Crop Productivity: an Overview. In: Reactive Oxygen Species in Plants: Boon or Bane? Revisiting the Role of ROS, First Edition. Edited by V. P. Singh, S. Singh, D.K. Tripathi, S.M. Prasad, D. K. Chauhan, Pp 117-135. John Wiley & Sons Ltd.
5. Gupta S.K, Sharma M, Deeba F, Pandey V. 2017. Role of Reactive Oxygen Species in Photophosphorylation and Damage to D1 Protein: Past and Present. In: Reactive Oxygen Species in Plants: Boon or Bane? Revisiting the Role of ROS, First Edition. Edited by V. P. Singh, S. Singh, D.K. Tripathi, S.M. Prasad, D. K. Chauhan, Pp 165-185, John Wiley & Sons Ltd.
6. Deeba F. and Pandey V. 2017. Adaptive mechanisms of desiccation tolerance in resurrection plants. In: Plant Adaptation Strategies in Changing Environment. (Eds), V.Shukla, S.Kumar, N. Kumar, pp 29-75, Springer Singapore.

Ph.D. guided/under supervision

Ph.D. Awarded - 7

Thesis under writing – 5

Under supervision - 4

Teaching responsibility:

Teaching post graduate students registered for Ph.D. at AcSIR (Course coordinator “ Climate Change and Plants”)

(Vivek Pandey)