Dr. Tapan Adhikari

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Research Specialization:

- Potential impact of micronutrient on crop production and soil system
- Synthesis, characterization and impact of nano-fertilizer on soil and plant
- Environmental fate, behavior and ecotoxicity of engineered nano particles
- Fate, transport and sorption mechanisms of heavy metals in soil, water and plant
- GEOCHEM-PC modeling for heavy metal activity determination and its impact on soil and plant
- Risk-assessment and soil remediation through nano materials/composites
- Utilization of Industrial wastes and its implication on plant and soil health
- Wastes/Tailings, Acid mine drainage characterizations and managements
- Phytoremediation for polluted and mine soil development
- Application of advanced analytical, spectroscopic and microscopic instruments in soil and plant research

Professional Experience:

- I joined as a Scientist in ICAR-IISS, Bhopal, and placed in All India Coordinating Research Project on Micro and Secondary Nutrients and Heavy Metal Pollution in soils and plants, IISS, Bhopal, and conducted different research projects on micronutrient and heavy metals effect on plant and soil during the period of twelve years from 1996 to 2007.

- During last decade (2007- Continued) onwards I am placed in Environmental Soil Science Division of ICAR-IISS, Bhopal, and engaged in research work in the field of Micronutrient nutrition, Heavy Metal pollution and its management in soil and plants. The major thrust area is application of nanotechnology in agriculture.

Awards and Honours:

- The XII International Congress Commemoration Award - 2014 for outstanding conferred by Indian Society of Soil Science, New Delhi, for contribution in exploring and implementing nanotechnology and nano-science for developing nano-fertilizer
- J. C. BOSE Gold Medal Award – 2014 conferred by Indian Society of Plant Physiology fro outstanding contribution in the field of plant physiology and cognate sciences.
- National Academy of Agricultural Sciences-Associate (2007-2011), New Delhi, India
- Golden Jubilee Commemoration Young Scientist Award (2004), Indian Society of Soil Science, New Delhi.
- FIRST Chaudhary Devi lal Outstanding AICRP- Award (2001), ICAR, New Delhi.
- Jawahar Lal Nehru Award (1998), Indian Council of Agricultural Research (ICAR), New Delhi
- S. S. Ranade Memorial Award (1997), S. S. Ranade Memorial Trust, Pune
- S. P. Roychoudhury Gold Medal (1997), Indian Society of Soil Science, New Delhi

- Shambhu Nandi Gold Medal Award (1992), Bidhan Chandra Krishi Viswa Vidyalaya, Mohanpur, West Bengal
- Zonal Award (East Zone) (1992), Indian Society of Soil Science, New Delhi

- Awarded Endeavour Research Fellowship-2015 for six months and pursued under Dr. Raja at GCER, University of Newcastle, Australia.

- Awarded *three months training programme* in the area of NANO TECHNOLOGY (Natural Resource Management) by HRD Programme of NAIP Project conducted at University of Massachusetts-Amherst, USA, during September 20, 2010 to December 20, 2010.

- Awarded one year Post Doctoral Fellowship in Soil Science (1999), Israeli Council of Higher Education, Israel.

Top Ten Publications:

1. **Adhikari, Tapan** and Rattan, R.K. (2000) Modelling zinc uptake by rice crop using a Barber-Cushman approach. ***Plant and Soil***, 227, 235-242.
2. **Adhikari, Tapan** and Singh, M.V. (2003) Sorption characteristics of lead and cadmium in some soils of India. ***Geoderma,*** 114 (1-2), 81-92.
3. **Adhikari, Tapan** and Kumar, Ajay (2012). *Phytoaccumulation and Tolerance ofRiccinus CommunisL. to Nickel.* ***International Journal of Phytoremediation****, 14(5), 481–492.*
4. **Adhikari, Tapan,** Kundu, Samaresh, Meena, Vasudeb, and Subba Rao, Anangi (2014) Utilization of Nano Rock Phosphate by Maize (*Zea mays* L.) Crop in a Vertisol of Central India. ***Journal of Agricultural Science and Technology A,*** 4: 384-394***.***
5. **Adhikari, Tapan**, Kundu, Samaresh, and Subba Rao, Anangi (2014) Microbial Solubilization of Phosphorus from Nano Rock Phosphate. ***Journal of Agricultural Science and Technology A,*** 4: 468-474.
6. **Adhikari, Tapan**, Kundu, S. Biswas, A. K., Tarafdar, J. C. and Subba Rao, A. (2015) Characterization of Zinc Oxide Nano Particles and Their Effect on Growth of Maize (*Zea mays* L.) Plant. ***Journal of Plant Nutrition,*** 38(10): 1505-1515***.***
7. **Adhikari, Tapan**, Sarkar, Dipayan, Mashayekhi, Hamid and Xing, Baoshan (2016) Growth and enzymatic activity of maize (*Zea mays* L.) plant: Solution culture test for copper dioxide nano particles. ***Journal of Plant Nutrition,*** 39 (1): 99-115.
8. **Adhikari, Tapan**, Kundu, S. and Subba Rao, A. (2016) Zinc delivery to plants through seed coating with nano-zinc oxide particles. ***Journal of Plant Nutrition,*** 39 (1): 136-146.
9. **Adhikari Tapan** and Kundu S. (2017) Nano rock phosphate : a potential phosphatic fertilizer to crops. ***Agrochimica,*** 61(1): 13-18.
10. **Adhikari Tapan** (2019) Magnesium Oxide Nano Particles Effects on Utilization of Soil Phosphorus by Maize (Zea mays L.) Plant. ***International Journal of Current Microbiology and Applied Sciences,*** 8(10): 410-419.