

Brief Profile



Dr. Ashok K. Patra Director

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Educational Background

Ph. D (Soil Sci. & Agril. Chem.), ICAR-Indian Agricultural Research Institute, New Delhi (1989); M. Sc (Soil Sci. & Agril. Chem.), Indian Agricultural Research Institute, New Delhi (1985). B. Sc (Agri.), Banaras Hindu University, Varanasi (1983).

Research Specialization

Nutrient cycling, soil health, climate change, soil ecology and microbial biodiversity in agro-ecosystems. Made significant contribution in advancement of nitrogen research in different agro-ecosystems in terms of understanding transformation processes, measurement of losses, its ecology and enhancing use efficiency. Developed integrated soil quality index for different cropping and land management systems. Assessed the impacts of climate change on nutrients transformations processes and uptake. Advanced understanding in nanoparticles research in soil and plants. Contributed significantly to develop a digital soil testing minilab – *Mridaparikshak* for soil health assessment and fertilizer advisory.

Professional Experience: Research, Teaching & Management

Director, ICAR-Indian Institute of Soil Science, Bhopal (2014 – to date.); Principal Scientist (2006-2014), Senior Scientist (1999-2006), ICAR-Indian Agricultural Research Institute, New Delhi; Senior Scientist, ICAR-Central Institute of Fisheries Education, Mumbai (1998-1999); Scientist, ICAR-Indian Grassland & Fodder Research Institute, Jhansi (1990-1998); Scientist Trainee, ICAR-National Academy of Agricultural Research Management, Hyderabad & ICAR-Indian Institute of Soil Science, Bhopal (1989-1990).

International Experience: Visiting Fellow (2008-2009), University of Notre Dame, Indiana, USA; Postdoctoral Fellow (2001-03) Ecologie Microbienne, UMR-CNRS 5557, Université Claude Bernard, Lyon, France; Visiting Scientist (1996), Institute of Grassland & Environmental Research, Exeter, UK; Postdoctoral Scientist (1991-1993), ICRISSAT, Hyderabad, India; Other professional visits: UK (1996, 2003, 2017), Germany (1996, 2018), Italy [2018, 2019 (2)], Indonesia (2017), USA (2009, 2016), Australia (2011), (Spain 2017), Tokyo (1997, 2016) The Netherlands (2002), Kuwait (2010), Nairobi (2014).

Awards and Honours

Recognised one among 13 soil scientists of the world advancing soil science (Food Tank, USA) on World Soil Day 2017 (<https://foodtank.com/news/2017/12/sustainable-soil-scientists/>); Dr. Sushil Kumar Mukherjee Commemoration Lecture Award (ISCA, Kolkata) 2018; Member, Intergovernmental Technical Panel on Soils (ITPS), FAO, Rome (2018-2021); International Plant Nutrition Institute (IPNI)-FAI Award, 2018; Bioved Agri-innovation Award -2015; IARI Hooker Award (2013); 'Bharat Jyoti Award (2012)' and

'Rajiv Gandhi Excellence Award (2012)' by IIFS, New Delhi; FAI-Dhiru Morarji Memorial Award 2011; Dr. G.S. Sekhon Memorial Lecture Award 2012 & Dr. N.S. Randhawa Memorial Lecture Award 2018 of ISSS; Dr. MV Rao Memorial Lecture Award 2019 IARI (Indore); DBT Biotechnology Overseas Associateship Award (2008); Fellow of the National Academy of Agricultural Sciences (FNAAS) (w.e.f. 2010); Fellow of West Bengal Academy of Science & Technology (FAScT) (w.e.f. 2018); Fellow of the Indian Society of Soil Science (w.e.f. 2013); Fellow of the Range Management Society of India (FRMSI) (w.e.f. 2007); President, Indian Society of Soil Science, New Delhi (2019-2020); President, Agriculture & Forestry Sciences Section, Indian Science Congress Association (2016- 2017); Vice-President, Indian Society of Soil Science, New Delhi (2016-2017); President, Delhi Chapter of the Indian Society of Soil Sci., New Delhi (2012-2014); Councillor of ISSS (2005-2006); Associate Editor: European Journal of Soil Science (2014 onwards). Other Honors/Awards/Recognitions: 40 (Best posters/papers/prizes, etc.).

Selected Top Ten Publications: (Based on Citations) *

- (1) Mandal, A., **Patra, A. K.**, Singh, D., Swarup, A., Masto R. E. (2007). Effect of long-term application of manure and fertilizer on biological and biochemical activities in soil during crop development stages. *Bioresource Technology* 98: 3585-3592. (IF=6.67, NAAS IF = 12.67, ci = 371)
- (2) Masto, R. E., Chhonkar, P.K., Singh, D., **Patra, A. K.** (2006). Changes in soil biological and biochemical characteristics in a long-term field trial on a sub-tropical inceptisol. *Soil Biology and Biochemistry* 38: 1577-1582. (IF=5.29, NAAS IF = 11.29, ci = 286).
- (3) **Patra A.K.**, Abbadie, L., Clays, A., Degrange, V., Grayston, S. J., Loiseau, P., Louault, F., Mahmood, S., Nazaret, S. Philippot, L., Poly, F., Prosser, J. I., Richaume, A. and Le Roux, X. (2005). Effect of grazing on microbial functional groups involved in soil N dynamics. *Ecological Monographs* 75(1): 65-80. (IF=7.70, NAAS IF = 13.70, ci = 216).
- (4) **Patra, A.K.**, Clays, A., Degrange, V., Grayston, S. J., Guillaumaud, N., Loiseau, P., Louault, F., Mahmood, S., Nazaret, S. Philippot, L., Poly, F., Prosser, J. I., and Le Roux, X. (2006). Effects of management regime and plant species on the enzyme activity and genetic structure of N-fixing, denitrifying and nitrifying bacterial communities in grassland soils. *Environmental Microbiology* 8 (6): 1005-1016. (IF=5.15, NAAS IF = 11.15, ci = 213).
- (5) Masto, R. E., Chhonkar, P.K., Singh, D., **Patra, A. K.** (2007). Soil quality response to long-term nutrient and crop management on a semi-arid inceptisol. *Agriculture, Ecosystem & Environment*: 118 (1): 130-142. (IF=3.95, NAAS IF = 9.95, ci = 207)
- (6) Masto, R. E., Chhonkar, P.K., Singh, D., **Patra, A. K.** (2008) Alternative soil quality indices for evaluating the effect of intensive cropping, fertilization and manuring for 31 years in the semi-arid soils of India. *Environmental Monitoring and Assessment* 136: 419-435. (IF=1.96, NAAS IF = 7.96, ci = 184).
- (7) Masto, R. E., Chhonkar, P.K., Purakayastha TJ, **Patra, A. K.** Singh, D. (2008) Soil quality indices for evaluation of long-term land use and soil management practices in semi-arid sub-tropical India. *Land Degradation & Development* 19 (5), 516-529. (IF=4.28, NAAS IF = 10.28, ci = 81).
- (8) Mohanty, S., **Patra, A. K.**, & Chhonkar, P.K. (2008). Neem (*Azadirachta indica*) seed kernel powder retards urease and nitrification activities in different soils at contrasting moisture and temperature regimes. *Bioresource Technology* 99: 894-899. (IF=6.67, NAAS IF = 12.67, ci = 57).
- (9) **Patra, A. K.**, Chhonkar, P.K. & Khan, M. A. (2006). Effect of green manure *Sesbania sesban* and nitrification inhibitor encapsulated calcium carbide (ECC) on soil mineral -N, enzyme activity and nitrifying organisms in a rice-wheat cropping system. *European Journal of Soil Biology* 42 (3): 173-180 (IF=2.24, NAAS IF = 8.24, ci = 46)
- (10) **Patra, A.K.**, Le Roux, X., Grayston, S. J., Loiseau, P., Louault, F. (2008). Unraveling the effects of management regime and plant species on soil organic carbon and microbial phospholipid fatty acid profiles in grassland soils. *Bioresource Technology* 99: 3545-3551. (IF=6.67, NAAS IF = 12.67, ci = 44).

Total publications: 306 (excluding seminars/symposia/conferences). Average citation of selected top 20 research articles is 108.

*The source of Citation Index shown above is from <https://scholar.google.co.in>