

Rajender (Raj) S. Varma, Chemist in EPA's National Risk Management Research Laboratory

Water Systems Division

[Mailing Address](#)

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Areas of Expertise: Over 45 years of research experience in management of multi-disciplinary technical programs. Extensively involved in broader aspects of chemistry that includes development of environmentally benign synthetic methods and chemical protocols:

- using alternate energy input systems namely mechanochemical, ultrasound and microwave irradiation
- greener synthesis of nanomaterials and nanocomposites and their applications in nano-catalysis (magnetically retrievable nano-catalysts)
- sustainable remediation of hazardous pollutants

Long term goals are to contribute broad expertise in chemistry to evaluate novel and safer environmental protocols in industrial chemistry and its impact in human health and environmental sciences.

Select Publications:

Kou, J., J. Wang, W. Sun, C. Lu, Z. Xu and R. S. **Varma**. [Selective Enhancement in Heterogeneous Photocatalytic Transformations](#). *Chemical Reviews*, 117:1445-1514 (2017).

Varma, R. S. [Greener and Sustainable Trends in Synthesis of Organics and Nanomaterials](#). *ACS Sustainable Chemistry and Engineering*, 4:5866-5878 (2016).

Verma, S., R. B. Nasir Baig, M. N. Nadagouda and R. S. **Varma**. [Visible Light Mediated Upgrading of Biomass to Biofuel](#). *Green Chemistry*, 18:1327-1333 (2016).

Sharma, V. K., J. Filip, R. Zboril, and R. S. **Varma**. [Natural Inorganic Nanoparticles – Formation, Fate, and Toxicity in the Environment](#). *Chemical Society Reviews*, 44:8410-8423 (2015).

Sharma, V. K., R. Zboril, and R. S. **Varma**. [Ferrates: Greener Oxidants with Multimodal Action in Water Treatment Technologies](#). *Accounts of Chemical Research*, 48:182-191 (2015).

Varma R. S. [Journey on Greener Pathways: From the use of Alternate Energy Inputs and Benign Reaction Media to Sustainable Applications of Nano-Catalysts in Synthesis and Environmental Remediation](#). *Green Chemistry*, 16:2027-2041 (2014).

View more research publications by [Rajender Varma](#)

Education:

- Postgraduate Diploma, Norwegian Institute of Technology, Trondheim, Norway; Pulp & Paper Technology, 1978.

- Diploma, Delhi University, Delhi, India; German Language, 1976.
- Ph.D., Delhi University, Delhi, India; Natural Products Chemistry, 1976.
- M.S., Kurukshetra University, Kurukshetra, India; Organic Chemistry, 1972.
- B.S., Panjab University, Chandigarh, India; Chemistry, Physics, Maths, 1970

Professional Experience:

- Visiting Scientist, Regional Centre of Advanced Technologies and Materials (RCPTM), Faculty of Science, Palacky University, Olomouc, Czech Republic, 2014-present

Committee and Board Memberships

- American Chemical Society (since 1986)
- University of Kentucky (Super fund)-SRC External Advisory Committee Member (since 2017)
- Editorial Board Member for professional journals including *Green Chemistry* (RSC); *ACS Sustainable Chemistry and Engineering* (ACS); *Environmental Science: Nano* (RSC); *Int. J. Green Nanotechnology* (Taylor and Francis); *Organic and Medicinal Chemistry Letters*, Springer-Verlag, Heidelberg, Germany; *Applied Sciences*, MDPI AG Basel, Switzerland; *Current Green Chemistry*, *Current Organocatalysis*, and *Current Microwave Chemistry* (Bentham Science), *Green and Sustainable Pharmacy*, *Current Opinion in Green and Sustainable Chemistry* (Elsevier), among others.

Awards and Honors

- Listed "Highly Cited Researchers" by Clarivate Analytics, formerly Thompson Reuters, 2016.
- International Assoc. of Advanced Materials (IAAM) Medal for notable & outstanding contributions in Advanced Materials Science and Technology, Stockholm, Sweden, 2016.
- ORD Sustainability Award, EPA *Sustainable Strategies for Risk Reduction in Nanotechnology: Application in Chemical Catalysis and Environmental Remediation*, 2015.
- Silver Medal for Superior Service-EPA NATIONAL HONOR AWARDS-Outstanding scientific and leadership contributions establishing EPA as a pioneering organization in the area of Green Chemistry, 2013.
- Science and Technology Achievement Award (STAA), US EPA (several Level II, Level III, and Honorable Mention, in 2017, 2012, 2009, 2008, 2007, 2003, 2002).
- National Risk Management Research Laboratory Award, US EPA. *Goal 1 - A Systems Approach to Sustainable Solutions*, 2011.
- National Risk Management Research Laboratory Award, US EPA. *Goal 1 - Environmental Solutions*, 2010.
- "Visionary of the Year Award" by *Green Technology for the Environment* for the promotion and support of green and sustainable technologies, 2009.
- Excellence in Government Fellow (2003-2004), The Council for Excellence in Government

[Science Matters: Nanomaterials: Harnessing the Potential, Understanding the Risks](#)

[Science Matters: Sustainable Chemistry: An Even Darker Shade of Green](#)