

ABOUT THE EDITORS







Dr. Rajesh Kumar stands as a distinguished scholar in the field of Physics, having earned his B.Sc., M.Sc., M.Phil (Gold Medalist), & Ph.D. degrees from Chaudhary Charan Singh University, Meerut. With a wealth of academic accomplishments, Dr. Kumar has dedicated the last 15 years to the pursuit of knowledge & education as an Assistant/Associate Professor and Head of the Department of Physics at Government Degree College Nanauta, Saharanpur (U.P.). He presented more than 61 research paper in national & international conferences/seminars. He has published more than 35 research papers in reputed national/ international journal & edited books. He has also participated in more than 15 workshop/short term courses. He has conducted many national webinar & quizzes related NEP-2020, Digital Library, Covid-19, Cyber Security and Higher Education etc. He has edited more than 10 multidisciplinary books like Sustainable Development in Current Scenario, Nanotechnology for All, Dimension of Innovation & Technology in Rising India, Artificial Intelligence for Everyone, Global Warming Climate Changes & Environment Crisis & also has authored many books like Laser Physics & Fiber Optics, Classical Mechanics & Gravitation, Demonstrative Aspects of Optics & Lasers, Introduction to Classical Mechanics & many more etc. The institution, now affiliated to Maa Shakumbhari University, Saharanpur (U.P.), was previously associated with Chaudhary Charan Singh University, Meerut. Dr. Kumar's commitment to advancing the understanding of Physics & his leadership in the academic realm underscore his invaluable contributions to the field.

Dr. KRISHAN KUMAR received the B.Sc. degree in mathematics from MJP Rohilkhand University, Bareilly, India, in 1997, the Master of Computer Application degree from CCS University, Meerut, India, in 2001, and the Ph.D. degree in Computer Science and Information Technology from the Institute of Engineering and Technology, MJP Rohilkhand University, Bareilly in 2010. He is currently working as an Assistant Professor (Level II) with the Department of Computer Science, Gurukul Kangri (Deemed to be University), Haridwar, Uttarakhand, India. Moreover, he is having 22 years of experience in academics. He has published more than 45 research papers in various national and international journals and proceedings. Furthermore, he has authored four books. His research interests include deep learning, natural language processing, image processing, and precision agriculture.



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Nanotechnology for Sustainable Development

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20

Nanotechnology for Enhancing Food Security

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Abstract

The degradation of natural resources, low agricultural productivity, significant postharvest losses, lack of value addition, and rapid population growth are making it increasingly difficult to improve food security and safety in underdeveloped countries. To deal with these challenges, scientists worldwide are working to integrate advanced technologies that can increase food supply and bridge the gap between demand and the food production supply chain. One such technology, nanotechnology, holds promise for enhancing agricultural output through the development of nanofertilizers, more effective pesticides and herbicides, soil regulation, wastewater management, and pathogen detection. Additionally, nanotechnology can be used in food processing, where it can boost production with higher market value, improve nutritional content and sensory qualities, enhance food safety, and protect against pathogens. Nanotechnology can also help farmers reduce postharvest losses by extending the shelf life of crops using nanoparticles. This review explores the current impact of nanotechnology on food security and its role in minimizing post harvest losses, while also addressing the challenges that hinder its application. Further research is needed to address the health and safety concerns surrounding this technology.

Keywords:

Agriculture; Food Processing; Food Safety; Nanoformulation; Nanosensors.
