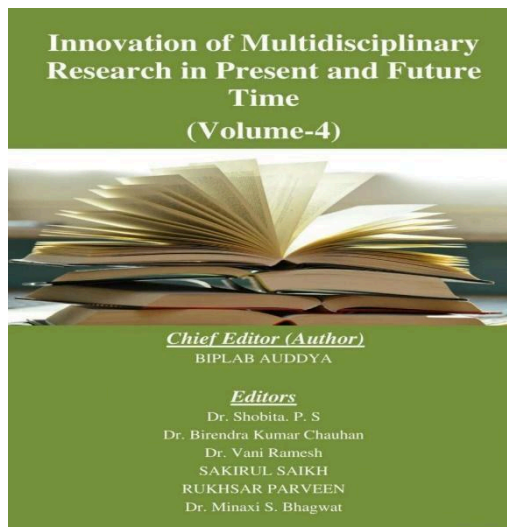


PES's Modern College, Ganeshkhind, Pune 411016

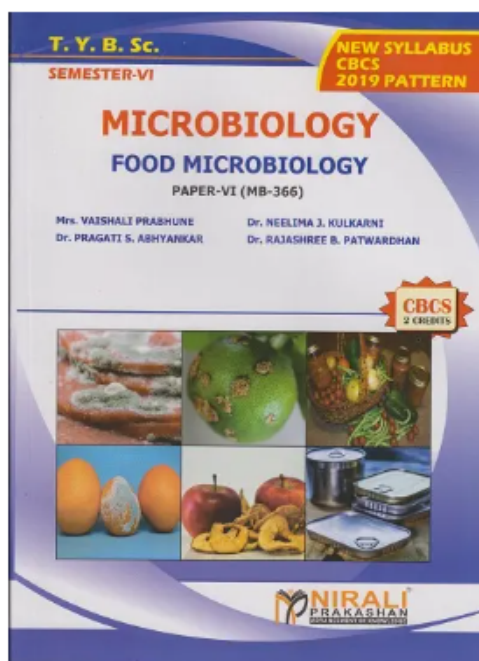
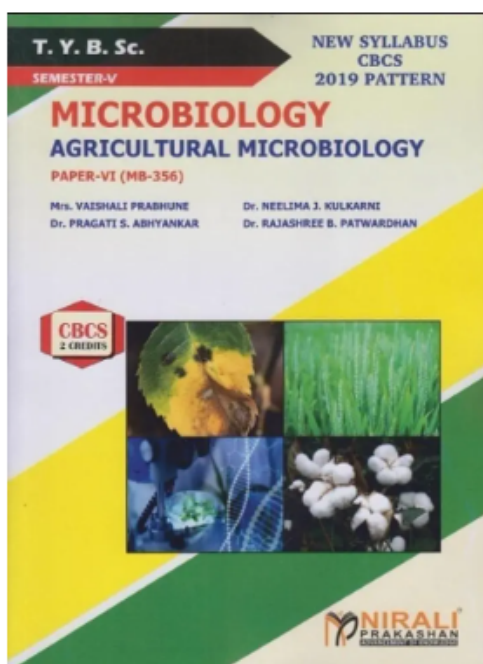
AQAR 2022-23

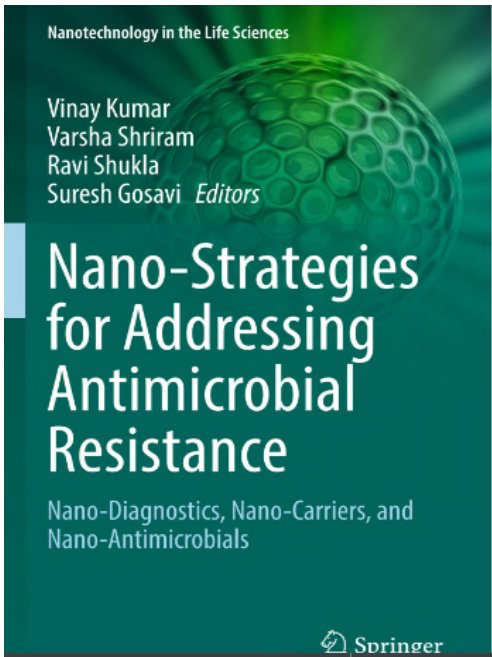
Metric 3.4.4 - Number of books published per teacher during the last year 2022-23



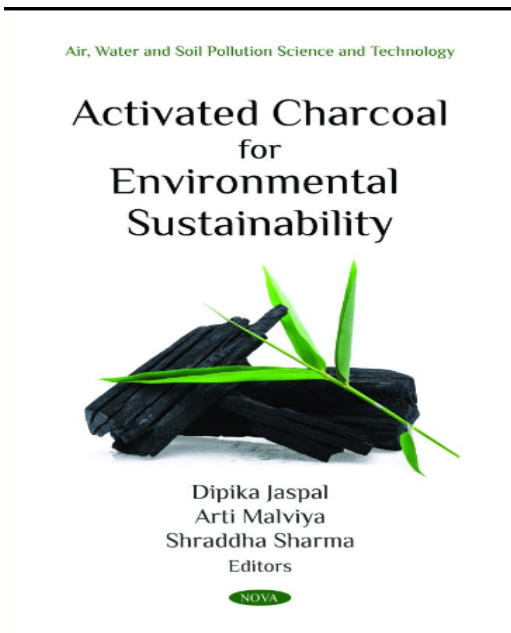
Innovation of Multidisciplinary Research in Present and Future Time (Volume-4) ISBN: 978-81-962702-3-0

22.	Study of fostering an entrepreneurial spirit amongst the students of higher educational institutes (Vijayalaxmi Kulkarni ¹ , Dr. Shubhangi Joshi ²)	128-138
23.	Veer Savarkar's Literary Works: A Window Into his Philosophy (Akash Sadanand Naik Salgaonkar)	139-148
24.	A STUDY ON THE CHALLENGES IN USING SECONDARY DATA FOR RESEARCH (Anthony Savio Herminio da Piedade Fernandes)	149-151
25.	A Report on : The Reliability of Covid-19 Vaccination to Improve the Immunity in India (Birendra Kumar Chauhan ¹ , Kuldeep Singh ²)	152-156





1	The History of Antibiotics Illumines the Future of Antimicrobial Peptides Administered Through Nanosystems	1
	Nazim Nassar, Stefan Kasapis, Suneela Pyreddy, and Taghrid Istivan	
2	Current Approaches and Prospects of Nanomaterials in Rapid Diagnosis of Antimicrobial Resistance	75
	Anapriya Baranwal, Vijay Kumar Aralappanavar, Bijay Kumar Behera, Vipul Bansal, and Ravi Shukla	
3	Nanomaterial-Mediated Delivery of Antimicrobial Agents: 'The Nanocarriers'	109
	Pramod Barathe, Sagar Reddy, Kawaljeet Kaur, Varsha Shriram, Rohit Bhagwat, Abhijit Dey, Sandeep Kumar Verma, and Vinay Kumar	
4	Nanoparticle Functionalization: Approaches and Applications	157
	Utara Oak and Tushar Khare	
5	Nano-adjuvants as Effective Next-Generation Antimicrobial Agents	183
	Tuyelece Das, Mimosa Ghorai, Utpal Anand, Arabinda Ghosh, Potshangbam Nongdam, Mahipal S. Shekhawat, Devendra Kumar Pandey, and Abhijit Dey	
6	Limiting Antibiotic-Resistant Bacteria Using Multifunctional Nanomaterials	193
	Ragini Singh, Stuti Bhagat, and Sanjay Singh	
7	Microbial Resistance Mechanisms and Potential of Metal-Organic Framework in Mitigation Thereof	237
	Shakil Ahmed Polash, Linda Varadi, and Ravi Shukla	



Air, Water and Soil Pollution Science and Technology

Activated Charcoal for Environmental Sustainability

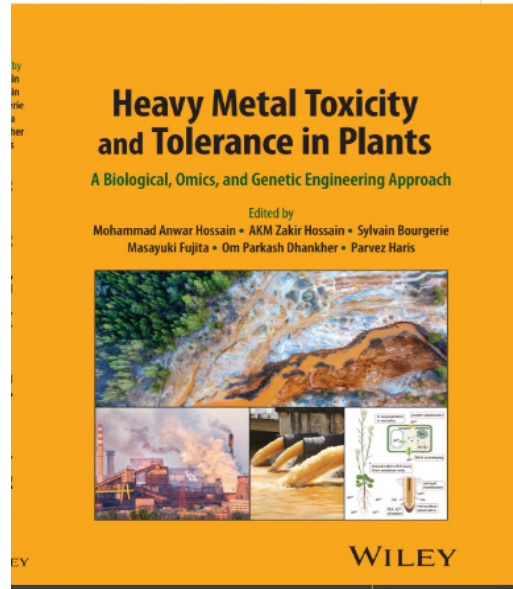


Dipika Jaspal
Arti Malviya
Shraddha Sharma
Editors

NOVA

Contents

List of figures	ix
Series editors' preface	x
Notes on contributors	xi
Acknowledgements	xvi
PART I Young people: radical democracy and community development	
1 Introduction: Young people, radical democracy and community development <i>Janet Batsleer, Harriet Rowley and Demet Likisli</i>	3
2 Thinking/acting with migrants under neoliberalism: "It's horrible to perceive solidarity as merely absorbing the sorrow of one side" <i>Cihan Erdal</i>	23
PART II Young people acting together for eco-justice	
3 Imagining the future under capitalism: young people involved in environmental activism in an economic crisis <i>Dena Arya</i>	45
4 Community building for and through sustainable food <i>Dominic Zimmermann</i>	60
5 Daring, dissolving and dancing: making communities with water <i>Róisín O'Gorman</i>	77
PART III Acts of citizenship?	
6 Community development, empowerment and youth participation in social-housing neighbourhoods in France <i>Gülçin Erdi</i>	99
7 LGBTQ+ young peoples' sexuality and gender citizenship in digital spaces <i>Sally Carr and Ali Hanbury</i>	115
8 Enabling spaces for and with marginalised young people: the case of the Disha peer support and speak out group <i>Sadhana Natu</i>	131
9 Meaningful youth engagement in community programming in Kenya <i>Yvonne Akinvi Ochieng, Su Lvin Corcoran and Kate Pahl</i>	149



2 **Advanced Techniques in Omics Research in Relation to Heavy Metal/Metalloid Toxicity and Tolerance in Plants** 35

Ali Raza, Sharada Basha, Najat Setlhi, Monica Janku, Sidra Chugh, Abdulkarim Cheberraf, Razi, and Mohammad Anwar Hossain

2.1 Introduction 35

2.2 An Overview of Plant Responses to Heavy Metal Toxicity 35

2.3 How the Integration of Multi-omics Data Sets Helps in Studying the Heavy Metal Stress Responses and Tolerance Mechanisms? 39

2.3.1 The Contribution of State-of-the-Art Genomics-Assisted Breeding 39

2.3.1.1 Quantitative Trait Locus (QTL) Mapping 39

2.3.1.2 Genome-Wide Association Studies 41

2.3.2 Transcriptomics 42

2.3.3 Proteomics 44

2.3.4 Metabolomics 46

2.3.5 miRNAomics 47

2.3.6 Epigenomics 49

2.4 Conclusion and Perspectives 50

References 50

3 **Heavy Metals/Metalloids in Food Crops and Their Implications for Human Health** 50

Shahab Jahan, Masim Aftab, Mahmud Hossain, Arslan Bhatti, Renald Blundell, and Ali Rafiqul Islam

3.1 Introduction 59

3.2 Arsenic 60

3.2.1 Sources and Forms 60

3.2.2 Food Chain Contamination 62

3.2.3 Pharmacokinetic Processes 62

3.2.4 Toxicology Processes 62

3.2.5 Remedial Options 63

3.3 Cadmium 63

3.3.1 Sources and Forms 64

3.3.2 Food Chain Contamination 64

3.3.3 Pharmacokinetic Processes 66

3.3.4 Toxicology Processes 66

3.3.5 Remedial Options 67

3.4 Lead 67

3.4.1 Sources and Forms 68

3.4.2 Food Chain Contamination 68

3.4.3 Pharmacokinetic Processes 68

3.4.4 Toxicology Processes 70

3.4.5 Remedial Options 71

3.5 Chromium 72

3.5.1 Sources and Forms 72

3.5.2 Food Chain Contamination 74

