

Table of Contents

Preface

Chapter 1: Application of Sorbents in Environmental Protection Technologies

Synthesis, Structure and Magnetic Properties of Carbon Composites Based on Finely Dispersed Powders of Different Valence Iron Oxides	
I. Bordun, M. Malovanyy, N. Nahurskyi and A. Borysiuk	3
Sorption Properties of Ultrasound-Activated Bentonites of Cherkasy and Ilnytskyi Deposits	
V. Kochubei, Y. Yaremchuk, M. Malovanyy and N. Buhaichuk	13
Adsorption Properties of Natural and Synthetic Zeolites for Ammonium and Phosphate Removal from Wastewater	
V. Sabadash, O. Konovalov, A. Nowik-Zajac and I. Zawierucha	21
Study of Sorption Properties of Buckwheat Husk Biochar	
A. Tkachenko, O. Sahdeeva, G. Krusir and M. Malovanyy	31

Chapter 2: Promising Strategies for Biomass Processing and Biowaste Utilisation

Improvement of Technologies of Biogas Production from Plant Waste	
H. Sakalova, T. Titov, D. Mariin, A. Kulyk and O. Valchuk	43
Using Biomass of Microalgae as a Potential Biofuel	
V. Dyachok, V. Kochubei, S. Huhlych and S. Mandryk	49

Chapter 3: Methods of Ecological Risk Evaluation and Analysis of Environmental Damage from Military Actions

Statistical Analysis of the Influence of Heavy Metals in the Soil on the Biometric Parameters of Plants as a Consequence of Military Actions	
K. Petrushka, M. Malovanyy, I. Petrushka and J. Warchol	59
Satellite Monitoring of the Effects of Hostilities on Especially Valuable Coastal Areas of the Dnipro-Buh Estuary	
I.V. Tymchenko, D.O. Krysinska and V.V. Hulevets	71
Assessment of the Level of Greenery in Certain Districts of Odesa	
V. Ilina, A. Ilina and O. Chernyakova	81
Improving Methods for Assessing the Quality of Water Objects as Sources of Irrigation Water (on the Example of Rivers in the Odesa Region)	
S. Yurasov and V. Karaulov	87

Chapter 4: Perspective Methods and Technologies for Environmental Protection and Sustainable Development

Preparation and Characteristics of Films Based on Polyvinyl Alcohol and Starch for Environmentally Friendly Packaging	
O. Krykhovets and V. Slobodyanyk	101
Evaluation of the Impact of Wearing a Filtering Half Mask on the Cognitive Indicators of Users	
S. Cheberiyachko, D. Radchuk, Y. Cheberiyachko, O. Deryugin and M. Naumov	109
New Method of Chemical Substances Conversion – Aerosol Nanocatalysis Technology. The way of Development	
I. Glikina, M. Glikin and E. Zubcov	121

On Obtaining Nanomaterials from Industrial Waste O. Korchuganova, V. Mokhonko, E. Potapenko, K. Kanarova, A. Novikova and R. Luque	133
Environmentally Safe Increase in Productivity of Amaranth under the Action of Growth Stimulants T. Vasylynych, O. Khodanitska, O. Shevchuk, O. Tkachuk and O. Valchuk	143

Chapter 5: Waste Management and Food Security

Problems of Waste Management in Wartime Conditions A. Titova, V. Shmandiy, M. Malovanyy, O. Kharlamova and T. Rigas	151
Ecosystem Services of Natural Systems North-Western Shelf of the Black Sea: Current Status and Problems of Use T. Safranov and M. Dyachenko	159
Semantic Analysis of the Concept of “Aquafood System” H. Tiutiunnyk	167
Assessment of Special Conditions, Aspects and Main Criteria for Implementation of Food Waste Management System in Ukraine M. Korbut, M. Malovanyy, I. Davydova, R. Boyko and N. Vronska	183