

1. Record Nr.	UNINA9911098504003321
Titolo	No shelf required 2 : use and management of electronic books / / edited by Sue Polanka
Pubbl/distr/stampa	Chicago, : American Library Association, 2012
ISBN	0-8389-9385-0 1-283-43549-7 9786613435491 0-8389-9382-6
Edizione	[1st ed.]
Descrizione fisica	1 online resource (211 pages)
Altri autori (Persone)	PolankaSue
Disciplina	070.573 20 025.174
Soggetti	Libraries - Special collections Electronic books Libraries and electronic publishing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Going digital but not bookless : physical, digital library spaces / Amelia Brunskill -- E-books : do they bridge the digital divide or create a larger chasm? / Sarah E. Twill -- Accessibility issues in e-books and e-book readers / Ken Petri -- Making sense of change : e-books, access, and the academic library / Lisa Carlucci Thomas -- E-book preservation : business and content challenges / Amy Kirchhoff -- Weeding e-books / Alice Crosetto -- What is RDA, and why should e-book managers care? / Steve Kelley -- Enhanced e-books : how books are coming alive in the digital environment / Sylvia K. Miller -- E-book sea change in public libraries : lending, devices, training, and budgets / Michael Porter, Matt Weaver, and Bobbi Newman -- Libraries as zones for content creation, indie publishing, and print on demand / Thomas A. Peters -- Getting control, staying relevant : how libraries can push the e-book envelope to their advantage / Joseph Sanchez -- The iPad loaner program at Oberlin College Library / Jessica Grim and Allison Gallaher -- Leading and learning : technology and e-book adoption in

school libraries / Carolyn Foote -- E-reader adoption in the school library media center : a journey of collaboration and discovery / Jennifer LaGarde and Christine James -- Give them something to talk about : the Kindle pilot program at the Unquiet Library / Buffy Hamilton -- Using e-books with reluctant readers / Kathy Parker.

Sommario/riassunto

Contributors from across the breadth of the e-book world offer their perspectives on what s happening now and what to expect in the coming months and years.

2. Record Nr.

UNINA9911073922003321

Autore

Kumar Abhishek

Titolo

Microplastic Monitoring Using Artificial Intelligence

Pubbl/distr/stampa

Newark : , : John Wiley & Sons, Incorporated, , 2026
©2026

ISBN

1-394-45011-7
1-394-45010-9
9781394450107

Edizione

[1st ed.]

Descrizione fisica

1 online resource (374 pages)

Disciplina

628.5

Soggetti

Microplastics
Artificial intelligence

Lingua di pubblicazione

Inglese

Formato

Materiale a stampa

Livello bibliografico

Monografia

Nota di contenuto

Cover -- Series Page -- Title Page -- Copyright Page -- Contents -- Preface -- Chapter 1 Introduction to Microplastic and the Role of AI -- 1.1 Introduction -- 1.1.1 Background and Importance of the Study -- 1.1.2 Definition of Microplastics -- 1.1.3 Sources and Types of Microplastics -- 1.1.4 Environmental and Health Impacts -- 1.2 Microplastic Distribution and Pathways -- 1.2.1 Marine and Freshwater Systems -- 1.2.2 Soil and Agricultural Environments -- 1.2.3 Airborne Microplastics -- 1.2.4 Bioaccumulation in the Food Chain -- 1.3 Current Methods of Microplastic Detection -- 1.3.1 Sampling and Collection Techniques -- 1.3.2 Conventional Analytical Methods

(Microscopy, FTIR, Raman Spectroscopy) -- 1.3.3 Limitations of Traditional Approaches -- 1.4 Role of Artificial Intelligence (AI) in Microplastic Research -- 1.4.1 Introduction to AI and Machine Learning Concepts -- 1.4.2 AI for Image-Based Microplastic Identification -- 1.4.3 AI for Predictive Modeling of Microplastic Pollution -- 1.4.4 AI in Real-Time Monitoring and Sensing -- 1.4.5 Integration of AI with IoT and Remote Sensing -- 1.5 Case Studies and Applications -- 1.5.1 AI-Driven Microplastic Detection in Marine Systems -- 1.5.2 AI for Wastewater Treatment Monitoring -- 1.5.3 Predictive Analytics for Microplastic Pollution Hotspots -- 1.6 Challenges and Limitations -- 1.6.1 Data Availability and Quality Issues -- 1.6.2 Technical and Computational Challenges -- 1.6.3 Ethical and Policy Considerations -- 1.7 Future Directions -- 1.7.1 Advancements in AI Models for Environmental Applications -- 1.7.2 Cross-Disciplinary Research Opportunities -- 1.7.3 AI for Policy Support and Decision-Making -- 1.7.4 Towards Sustainable Microplastic Management -- 1.8 Conclusion -- References -- Chapter 2 A CNN-ViT Hybrid Deep Learning Architecture for Accurate Microplastic Detection -- 2.1 Introduction. 2.2 Literature Review -- 2.3 Proposed Mythology -- 2.4 Result and Discussion -- 2.5 Concluding Remarks and Future Scope -- References -- Chapter 3 XAI for Decision Support in Microplastic Pollution Management -- 3.1 Introduction -- 3.2 Causes and Consequences and Effects of Microplastic Pollution -- 3.3 The Application of AI in Management of the Environment -- 3.4 XAI Frameworks are Flexible and for the Micro Plastic Environmental Management and the Summary to Explainable Artificial Intelligence -- 3.5 Application and Case Studies of XAI Microplastic Pollution Management -- 3.6 The Utilization of Machine Learning with Explainable AI (XAI) Regarding Decision Support Systems -- 3.7 Futures Directions and Challenges of Explainable AI with Microplastic Pollution -- 3.8 Conclusion -- References -- Chapter 4 AI-Driven Technologies in Mitigation of Microplastic Pollution -- 4.1 Introduction -- 4.2 AI Assisted Detection Techniques for the Microplastic -- 4.2.1 AI-Assisted Image Processing Technology -- 4.2.2 AI-Assisted FTIR -- 4.2.3 AI-Assisted Raman Spectroscopy -- 4.2.4 AI-Assisted HSI -- 4.3 Application of AI in Microplastic Pollution Control -- 4.4 Conclusion -- References -- Chapter 5 AI Driven Optical Imaging and Spectroscopic Techniques -- List of Abbreviations -- 5.1 Introduction -- 5.1.1 Origins of Microplastics: Sources, Types, and Impact -- 5.1.2 Traditional Detection Methods -- 5.1.3 Potential of AI in Transforming Microplastic Monitoring -- 5.2 Fundamentals of Optical Imaging and Spectroscopic Techniques -- 5.2.1 Optical Imaging: Principles and Applications -- 5.2.2 Spectroscopic Techniques: Raman and FTIR Spectroscopy -- 5.2.3 Integration of AI into Optical and Spectroscopic Tools -- 5.3 AI Innovations in Microplastic Detection -- 5.3.1 Machine Learning for Image Analysis and Classification -- 5.3.2 Neural Networks in Spectral Data Processing. 5.3.3 Data Fusion for Enhanced Detection Accuracy -- 5.4 Applications in Real-Time Monitoring -- 5.4.1 Aquatic Ecosystem Analysis -- 5.4.2 Airborne Microplastic Detection -- 5.4.3 Industrial and Urban Monitoring Systems -- 5.5 Case Studies in AI-Driven Microplastic Detection -- 5.5.1 AI-Enhanced Raman Spectroscopy in Marine Monitoring -- 5.5.2 Automated Optical Imaging Systems for Waste Management -- 5.5.3 Community-Based Monitoring Initiatives -- 5.6 Challenges in AI-Driven Microplastic Monitoring -- 5.6.1 Technical Barriers: Data Volume and Processing Power -- 5.6.2 Scalability and Cost Constraints -- 5.6.3 Ethical and Privacy Concerns in Data Use -- 5.7 Future Directions -- 5.7.1 Innovations in AI Algorithms for

Detection -- 5.7.2 Advancements in Sensor Technologies -- 5.7.3 Policy and Regulatory Frameworks Supporting Adoption -- 5.7.4 Pathways for Addressing Microplastic Pollution with AI -- 5.8 Conclusion -- 5.8.1 Summary of Key Developments -- 5.8.2 Future Perspectives -- Acknowledgement -- References -- Chapter 6 Integrating AI with Advanced Sensor Technologies for Real-Time Monitoring -- 6.1 Introduction -- 6.2 Bibliographic Study -- 6.3 AI-Enabled Sensor Technologies for Microplastic Detection -- 6.4 Challenges and Future Prospects -- 6.5 Conclusion -- References -- Chapter 7 Machine Learning for Microplastic Source and Pathway Prediction -- 7.1 Introduction -- 7.1.1 Overview of Microplastic Pollution and Its Global Impact -- 7.1.2 Limitations of Conventional Methods in Identifying Microplastic Sources and Tracking Their Dispersion -- 7.1.3 The Case for Using Machine Learning in Environmental Studies -- 7.2 Microplastic Sources and Pathways: An Overview -- 7.2.1 Classifying Microplastic Sources Into Primary and Secondary -- 7.2.2 Main Pathways of Microplastic Movement: Rivers, Runoff, Currents, and Air. -- 7.2.3 Impact of Location and Climate on Microplastic Spread -- 7.3 Data Acquisition and Preprocessing -- 7.3.1 Types of Data Required -- 7.3.2 Data Sources -- 7.3.3 Challenges in Data Collection, Quality Control, and Labelling for Machine Learning -- 7.4 Machine Learning Approaches for Microplastic Modeling -- 7.4.1 Supervised Learning -- 7.4.2 Unsupervised Learning -- 7.4.3 Deep Learning -- 7.5 Model Development and Validation -- 7.6 Case Studies and Real-World Implementations -- 7.7 Visualization and Decision Support -- 7.7.1 Role of Visualization in Microplastic Prediction -- 7.7.2 Role of GIS in Data Integration and Monitoring -- 7.7.3 Decision Support Systems and Their Role in Policy -- 7.7.4 Multi-Stakeholder Impact and Use Cases -- 7.8 Challenges and Ethical Considerations -- 7.9 Conclusion and Future Scope -- References -- Chapter 8 Big Data Analytics in Mapping the Global Microplastic Distribution -- 8.1 Introduction -- 8.2 Data Sources for Microplastic Mapping -- 8.3 Big Data Techniques in Microplastic Analytics -- 8.4 Challenges in Big Data for Microplastic Studies -- 8.5 Case Studies -- 8.6 Applications and Implications -- 8.7 Future Directions -- 8.8 Conclusion -- 8.9 Acknowledgement -- References -- Chapter 9 Automation in Sampling and Processing, Robotics, and AI Synergy -- 9.1 Introduction -- 9.2 Robotics in Sampling and Processing -- 9.2.1 Types of Robotic Systems Used in Sampling and Processing -- 9.2.2 Automation in Environmental Sampling -- 9.2.3 Role of Robotics in Industrial and Biomedical Processing -- 9.3 AI-Driven Processing Workflows -- 9.4 Challenges and Limitations -- 9.5 Case Studies and Applications -- 9.6 Innovations and Emerging Trends -- 9.7 Future Directions -- 9.8 Conclusion -- References -- Chapter 10 Cross-Disciplinary Case Studies: AI in Action for Microplastic Research -- 10.1 Introduction. -- 10.2 Literature Review -- 10.3 Proposed Methodology -- 10.4 Result and Discussion -- 10.5 Concluding Remarks and Future Scope -- References -- Chapter 11 Ethical and Social Implications of AI in Environmental Science: Balancing Innovation and Responsibility -- Introduction -- Methodology -- Result and Evaluation -- Challenges and Limitations -- Governance and Regulatory Frameworks -- Strategies for Responsible Integration -- Future Outcomes -- Conclusion -- References -- Chapter 12 Regulatory and Policy Challenges for AI-Enhanced Microplastic Monitoring -- 12.1 Introduction -- 12.2 Microplastic Monitoring through AI -- 12.2.1 Microplastic Detection -- 12.2.2 Classification and Quantification -- 12.2.3 Real-Time Monitoring and High-Resolution -- 12.3 The Current

State of Microplastic Monitoring Regulations -- 12.3.1 Current Environmental Regulations and Microplastic Surveillance Guidelines -- 12.3.2 National and International Guidelines -- 12.3.3 Complications in Implementing and Complying with Policies -- 12.3.3.1 Lack of Techniques Installed for Detection and Measurement -- 12.3.3.2 Variations in Legal Definitions -- 12.3.3.3 Inconsistent Methods of Enforcement -- 12.3.3.4 Inadequate Stakeholder Partnership -- 12.3.3.5 New Potential Risks and Limitations in Technology -- 12.4 Regulatory Obstacles in AI-Powered Microplastic Identification -- 12.4.1 Inadequate Worldwide Standards -- 12.4.2 Problems with Data Difference, Accuracy, and Reproducibility -- 12.4.3 Accountability and Transparency of Algorithms -- 12.5 Privacy and Ethical Issues with AI-Powered Environmental Monitoring -- 12.5.1 The Ethical Consequences of AI in Science Research -- 12.5.2 Privacy Concerns: Acquiring Geographical and Sensitive Data -- 12.5.3 Ownership, Security, and Accessibility of Data -- 12.6 Policy Ideas for Including AI in Microplastic Monitoring.
12.6.1 Need for Standardized Protocols, Especially for AI.

Sommario/riassunto

Revolutionize your approach to environmental protection with this groundbreaking resource, which details how to replace labor-intensive manual analysis with deep learning and explainable AI (XAI) to achieve precise, real-time identification and scalable monitoring of microplastic pollution.
