



SDG 6: CLEAN WATER & SANITATION

Progress Report 2023-2024

MANAV RACHNA UNIVERSITY

Established wide Haryana state Legislature Act
No 26 of 2014 & under section 2(f) of UGC 1956



Ensure availability and
sustainable management of water
and sanitation for all.

SDG 6: CLEAN WATER & SANITATION

Preface

WE, THE FACULTY, STAFF, AND STUDENTS OF MANAV RACHNA UNIVERSITY, recognizing that access to clean water and adequate sanitation is fundamental to human dignity, health, and sustainable development, hereby affirm our steadfast commitment to the objectives of the United Nations Sustainable Development Goal 6 (SDG 6): Ensure availability and sustainable management of water and sanitation for all.

WHEREAS water security and hygiene are essential for sustaining life, supporting ecosystems, and enabling inclusive growth, the university acknowledges its responsibility to act as a catalyst for change through education, research, and community engagement in water conservation and sanitation management;

WHEREAS Manav Rachna University has implemented several initiatives such as rainwater harvesting systems, wastewater recycling, and water-efficient infrastructure, reflecting our institutional dedication to minimizing water wastage and ensuring responsible consumption across the campus;

WHEREAS through community outreach programs, awareness campaigns, and collaborations with local bodies, the university actively promotes safe water practices, hygiene education, and sustainable sanitation solutions among surrounding communities, thereby extending the impact of its sustainability mission beyond campus boundaries;

WHEREAS faculty and students contribute to research and innovation in water purification technologies, sustainable urban water management, and circular water use systems, thereby advancing knowledge and practice in alignment with national and global priorities for sustainable resource use;

NOW, THEREFORE, BE IT RESOLVED that Manav Rachna University shall continue to uphold its vision of a water-secure and healthy future, integrating water conservation and sanitation principles into teaching, research, operations, and community initiatives. The University reaffirms its pledge to create a model campus of water stewardship, where every individual contributes to protecting and preserving this precious resource for present and future generations.

SDG 6: CLEAN WATER & SANITATION

Clean water and sanitation are not merely basic needs – they are fundamental human rights and essential pillars of health, dignity, and sustainable development. Access to safe water and adequate sanitation forms the foundation for breaking cycles of poverty, improving public health, reducing inequalities, and ensuring environmental sustainability. Sustainable Development Goal 6 (SDG 6), adopted by all United Nations Member States in 2015 as part of the 2030 Agenda for Sustainable Development, calls for ensuring availability and sustainable management of water and sanitation for all.

Despite global progress, billions of people still lack access to safe drinking water, proper sanitation facilities, and hygiene services. Rapid urbanization, climate change, and pollution continue to strain freshwater resources, disproportionately affecting vulnerable and marginalized communities. The COVID-19 pandemic further highlighted the importance of hand hygiene and resilient water infrastructure as critical defenses for global health and well-being.

Vision: SDG 6 envisions a world where everyone, everywhere, has access to clean water and safe sanitation, where water resources are managed sustainably, and where communities are empowered to protect aquatic ecosystems. This goal emphasizes the need for integrated water resource management, wastewater treatment, pollution reduction, and water-use efficiency, ensuring that the planet's most precious resource is preserved for future generations. It calls upon governments, institutions, and individuals alike to take transformative action—promoting innovation, equity, and sustainability in every drop of water used and every life it touches.

GLOBAL CONTEXT

Sustainable Development Goal 6 (SDG 6) aims to ensure the availability and sustainable management of water and sanitation for all, reflecting a critical global challenge. Access to clean water and adequate sanitation is fundamental for human health, economic development, and environmental sustainability, yet billions of people worldwide still face water scarcity, poor sanitation, and water pollution. Rapid population growth, urbanization, climate change, and industrial activities intensify pressure on freshwater resources, making efficient management and equitable distribution essential. Globally, achieving SDG 6 requires integrated approaches that combine policy, technology, community engagement, and international cooperation to protect water ecosystems, promote hygiene, and ensure that every individual, regardless of geography or socio-economic status, has access to safe and reliable water and sanitation services.

RELEVANCE TO HIGHER EDUCATION

At, Manav Rachna University, the institutional commitment to SDG 6 is woven into the educational ecosystem, promoting responsible water management, hygiene awareness, and sustainable sanitation practices. Through its dedicated centre for peace and sustainability, the university's "Sahrita" vertical specifically aligns with SDG 6 by executing campaigns for water-saving, tree-plantation drives, and student-led community outreach on hygiene and clean environment practices. University is promoting awareness towards clean water and sanitation through its curricular and co-curricular engagements such as workshop on water conservation, awareness drive and promotion of sanitation in adopted village under the social responsibility programs. These initiatives encourage learners to reflect on their own daily water usage, apply theoretical knowledge in real-world settings (for instance community awareness or campus hygiene drives), and develop a values-based mindset focused on equitable access to clean water and sanitation. Consequently, the university fosters analytical thinking, community engagement, and ethical behaviour—all vital for preparing graduates who can contribute responsibly to water-security challenges and a sustainable future in alignment with SDG 6.

ALIGNMENT WITH MANAV RACHNA UNIVERSITY'S MISSION

MRU's mission emphasises the production of “globally competitive, ethical and socially responsible human resources” and explicitly states that it aims to “produce human resources sensitive to issues of Environment and Sustainable Development” as well as to “develop Environment and Sustainable Development as a thrust area of research and development.” This orientation creates a strong foundation for advancing SDG 6, which seeks to ensure availability and sustainable management of water and sanitation for all. By embedding environmental sensitivity and sustainable development into its core educational agenda, MRU is effectively preparing students to understand, research and act on issues connected to water-quality, access to sanitation infrastructure, water-use efficiency and community hygiene practices. In doing so, the university's mission translates into cultivating professionals and citizens who will engage in sanitation and water-resource challenges with ethical awareness and technical competence, thereby reinforcing MRU's social responsibility to contribute to clean water and sanitation outcomes in local, regional and global contexts.

POLICY ALIGNMENT AND INSTITUTIONAL VALUES

Manav Rachna University has implemented water management practices through its guidelines and policies. The policy highlights the careful use of water resource and wastage minimization. Under the Green Mission Policy, University promotes the water conservation and environmental sustainability.

Institutional core values promoting SDG 6

One of MRU's stated values is Social Responsibility: "Engaging in community outreach, service-learning, and sustainability initiatives.". This drives students and staff to participate in water-awareness campaigns, hygiene drives and sanitation-related community service programmes – a direct expression of SDG 6.

The value of Innovation and Student-Centered Approach provide the culture for finding creative solutions (for example water-reuse systems, rain-water harvesting) and for placing students as active agents in sustainable practices.

The value of Diversity and Inclusion also supports SDG 6, given that equitable access to clean water and sanitation is a matter of inclusion: ensuring all communities, including marginalised ones, benefit.

Infrastructure for Clean water and Sanitation



PICTURE SHOWING THE CLEAN AND GREEN CAMPUS OF MANAV RACHNA UNIVERSITY

Manav Rachna University has a strong infrastructure to support treatment of wastewater, management of solid waste and maintaining sanitation in campus through dedicated manpower and routine cleaning drives by faculty members and students.

SEWAGE TREATMENT PLANT



FILTRATION ASSEMBLY AND REACTOR TANK

Manav Rachna University has installed a Sewage Treatment Plant (STP) of 200 KLD capacity to treat wastewater generated from various facilities such as washroom and kitchen. The STP is based on MBBR technology i.e. Moving Bed Biofilm Reactor, which is an advance version of traditional activated sludge process, having efficiency to treat wastewater effectively with lesser requirement of space.

COMPOSTER



BIOCOMPOSTER AT MANAV RACHNA UNIVERSITY

Manav Rachna University has installed a Schnell Komposter, which is an organic waste composting machine. This composter is being used to convert organic waste such as food and garden waste into compost. This system is fully automatic and has potential to convert organic waste in to compost within 24 hours.

RO WATER FACILITY



WATER TANK AND RO SYSTEM
INSTALLED AT ROOF OF ACADEMIC
BLOCKS

DRINKING WATER AREA AND RO
SYSTEM



The University provides safe drinking water throughout the campus through installation of RO water system in different academic blocks and hostels.

INSTALLATION OF COLOUR CODED DUSTBINS FOR EFFECTIVE WASTE MANAGEMENT



COLOUR CODED DUSTBINS

University has installed colour coded dustbins in academic block, cafeteria, hostels, mess and each academic block for effective solid waste management practice. All staff and students follow the rules of waste segregation and use these dustbins effectively.

RAINWATER HARVESTING SYSTEM



RAINWATER HARVESTING SYSTEM AT MRU

Runoff water from rain is captured by rain water harvesting system commissioned at four locations in the campus, which channelize the water to tanks for future use. The harvested rain water from roof top and paved area is entered into the recharge shaft of 2-meter dia and 3 meter depth. The lower 1-meter part is filled with coarse sand to trap silt. The bottom of the shaft kept open against the aquifer for facilitating recharge.

Key Initiatives and Achievements

The different schools at Manav Rachna University are promoting SDG 6 by engaging students, Researchers, local communities and other stakeholder by organizing invited talks, workshop/ seminars/ Research & Development activities and awareness drives.


FIVE DAYS TRAINING PROGRAM ON "UNEARTHED DANGERS: THE HIDDEN THREAT OF SOLID WASTE IN DISASTER RISK"

School of Sciences, Manav Rachna University Faridabad in collaboration with Hazardous Waste Management Division, Ministry of Environment Forest & Climate Change organized five days training program Unearthed Dangers : The hidden threats of solid waste in disaster risk “ from 18 to 22 March 2024.

The objective of the training program was to provide insight on current practices and changes in solid waste management and to understand the risk due to improper handling of solid waste management. The first day of the training program was focused on the interlinking between solid waste generation and disaster risk. The first day of the training program provided participants with a comprehensive overview on disaster risk reduction initiatives and its link with solid waste management practices. Dr. Muzaffar Ahmad, (Former Member, National Disaster Management Authority, India), Dr. Veenu Joon (Additional Director, MoEF&CC), Dr. Abdheesh K. Gangwar (Regional Director, CEE, India) delivered the expert talk on the first day.

The focus of the second day of training session was community based participation in solid waste management and technical aspects of vermicomposting for solid waste management. Three distinguished experts viz. Dr. Deep Narayan Pandey (Special Centre for Disaster research, JNU), Dr. Mukesh Kanwar (Dr. H.S. Gour University), Prof. Paromita Chakraborty (SRMIST) shared their insight on second day. The third day emphasized the health hazards due to lack of solid waste management. Prof D.K. Sharma (IIT Delhi), Dr. Kalpana Arora (Consultant, Ministry of Urban & Housing Affairs, GoI) and Prof. P.K. Joshi (JNU) delivered expert lecture on third day.

On fourth day of the training program, Dr. Satyam Verma (Dr. H.S. Gour University) and Dr. R.P. Singh (Banaras Hindu university) shared their insights on role of GIS for solid waste Management and case studies on solid waste management. Mr. Himanshu Tilwankar (Advisor, Vyoants) explained the plastic waste management and associated health risk on fifth day of the training session.



MANAV RACHNA UNIVERSITY
Declared as State Private University vide Haryana Act 26 of 2014

Life
 Lifestyle for Environment

Training Program
 on
"Unearthed Dangers: The Hidden Threat of Solid Waste in Disaster Risk"
 organised by
The School of Sciences, Manav Rachna University, Faridabad
 in collaboration with
The Hazardous Substances Management Division (HSMD), MoEFCC, GoI.

2nd to 6th January 2024
Mode: Hybrid (In-person and Virtual)

SCAN THE QR CODE FOR REGISTRATION

Click on the Link:
<https://forms.gle/kbketXME7EbAPjw9>

Prof. (Dr.) I.K. BHAT
Member PVC, MoEFCC
 CHIEF PATRON

Prof. (Dr.) SANGITA BANGA
Member PVC, MoEFCC
 PATRON

Organizing Committee

Prof. (Dr.) M. Kapahi Convener	Dr. Ananna Bardhan Co-Convener	Dr. Vinayak V. Pathak Organizing Secretary	Dr. A. Sahai Treasurer
Prof. (Dr.) D.K. Sharma Member	Dr. S. Kumar Member	Dr. Arpit Sand Member	Dr. Aparna Vyas Member

- Registration fee: Free for the online participants; Rs. 1000/- for the participants attending in physical mode .
- The candidates are requested to register online on or before 27th December 2023. 11:00 am by filling up the Google form using the mentioned link or by scanning the given QR code.
- The seats are limited in number; participants are requested to register at the earliest.

FLYER OF THE TRAINING PROGRAM



PARTICIPANTS OF TRAINING PROGRAM

ONE-DAY WORKSHOP ON “ADVANCED INSTRUMENTATION AND SUSTAINABLE WASTE MANAGEMENT TECHNIQUES

The University Instrumentation Centre and School of Sciences, Manav Rachna University, Faridabad organized a one-day workshop on “Advanced Instrumentation and Sustainable Waste Management Techniques” on 17th February 2024. The event began with an inaugural session addressed by Prof. (Dr.) Meena Kapahi, Dr. Sandeep Kumar, and Dr. Vinayak V. Pathak, who welcomed the participants and introduced the objectives of the workshop. Dr. Sandeep Kumar shared insights about the department’s academic programs, faculty research areas, and student achievements, while Dr. Vinayak V. Pathak highlighted the university’s initiatives in solid waste management and the facilities available at the University Instrumentation Centre (UIC). Prof. (Dr.) Meena Kapahi discussed various solid waste management techniques and showcased related working models.

In the second technical session, Dr. Priti Gupta and Dr. Ekta Rawat demonstrated advanced analytical instruments such as GC-MS, FTIR, Powder XRD, UV-Visible Spectrophotometer, and RF-Sputtering, explaining their principles and applications. Research scholars provided participants with hands-on training on these instruments. The workshop concluded with a technical visit to the university’s wastewater treatment and biogas plants, where Dr. Pathak and Dr. A. Jayamani explained the treatment and biogas production processes, emphasizing MRU’s commitment to sustainability and environmental management.



STUDENTS ATTENDING THE TRAINING PROGRAM






**UNIVERSITY INSTRUMENTATION CENTER
 &
 DEPARTMENT OF SCIENCES
 IN COLLABORATION WITH
 HSMD, MOEF&CC**

**ADVANCED INSTRUMENTATION AND
 SUSTAINABLE WASTE MANAGEMENT
 TECHNIQUES**

**VENUE: MG04-UIC TIME: 9:30 AM ONWARDS
 DATE: 17TH FEBRUARY, 2024**









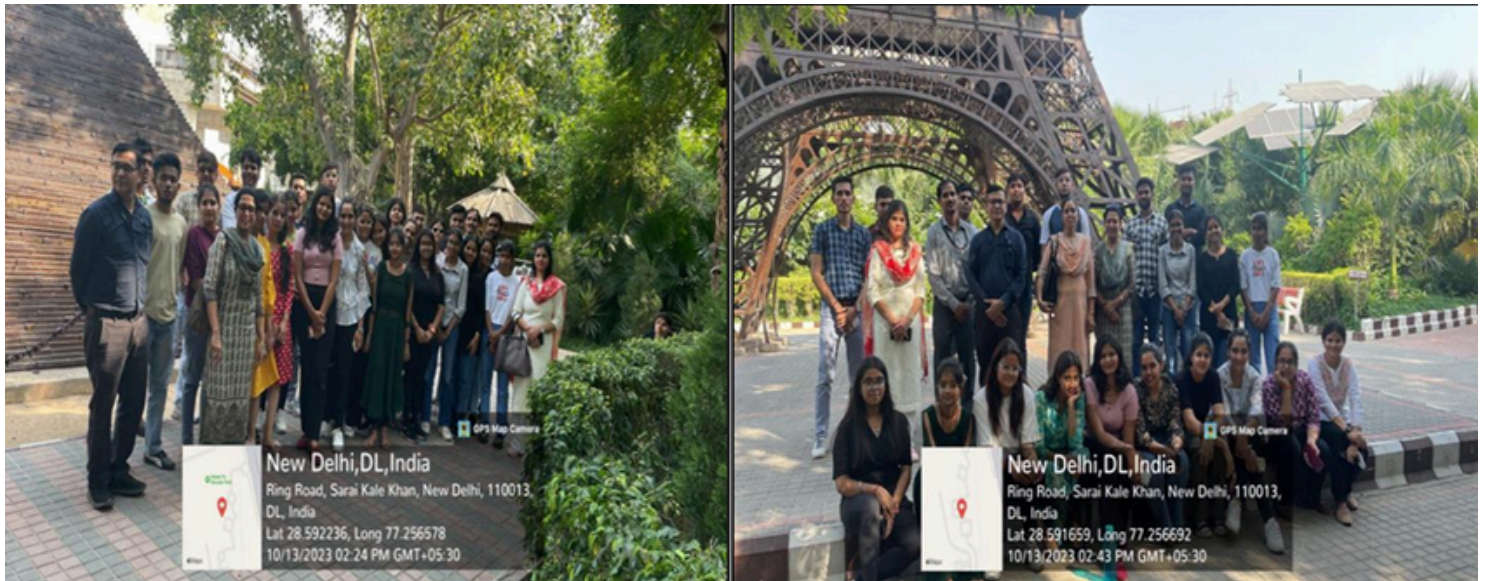


ORGANIZING COMMITTEE
PROF. (DR.) MEENA KAPAH,
DR. EKTA RAWAT, DR. PRITI GUPTA, DR. A. JAYMANI, DR. HARSHA DEVNANI
DR. VINAYAK V. PATHAK

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FLYER OF THE TRAINING PROGRAM

STUDENT'S VISIT : WASTE TO WONDER PARK



A VISIT TO WASTE TO WONDER PARK

As a part of awareness campaign to sensitize students regarding the effective use of solid waste, a visit to Waste to Wonder Park, Delhi was organized on 13th October 2023 by School of Sciences, Manav Rachna University. This park is an initiative by the South Delhi Municipal Corporation, focuses on effectively managing the city's waste while beautifying public spaces. The park showcases intricate and beautifully crafted replicas of the Seven Wonders of the World, all made from scrap materials promoting sustainability and waste recycling emphasizing the importance of repurposing waste materials! The experience likely left the students inspired and more aware of their roles in protecting the environment and promoting sustainability.

CLEANING DRIVE



STUDENTS PARTICIPATING IN CLEANING DRIVE

On the 22nd of June 2023, the Manav Rachna Centre for Peace and Sustainability (MRCPS) demonstrated its commitment to community well-being by organizing a cleaning drive at the Faridabad railway station. The event brought together a collective effort involving students, faculty members, and the dedicated cleaning staff. Enthusiastically wielding brooms, the participants collaborated to sweep and clean the passages, significantly enhancing the overall cleanliness and hygiene of the railway station premises.

The cleaning drive went beyond the immediate impact of a tidier environment; it instilled a sense of shared responsibility and community engagement among the participants. Students and faculty worked alongside the cleaning staff, fostering a spirit of unity in contributing to the well-being of the public space. The event not only showcased MRCPS's dedication to sustainable community practices but also served as a reminder of the positive impact that collective action can have on the local environment.

MRCPS's cleaning drive at the Faridabad railway station exemplifies the organization's holistic approach to community service, emphasizing the importance of active participation and collaboration in fostering positive change. By engaging students, faculty, and cleaning staff in a shared effort, the event not only left a tangible mark on the cleanliness of the railway station but also left a lasting impression of the power of collective action in building a cleaner and more sustainable community.

PARTICIPATION IN COMMUNITY PROJECTS: “JAL SHAKTI ABHIYAN”

Catch the Rain-2023 was a nationwide campaign launched by the Government of India to promote water conservation and the efficient use of water resources. Manav Rachna University has actively participated in this initiative by engaging students in this campaign. In this regard, the School of Education & Humanities has Organized activities related to to raise awareness among students and encouraged them to take an active part in water conservation efforts.

ACADEMIC INTEGRATION

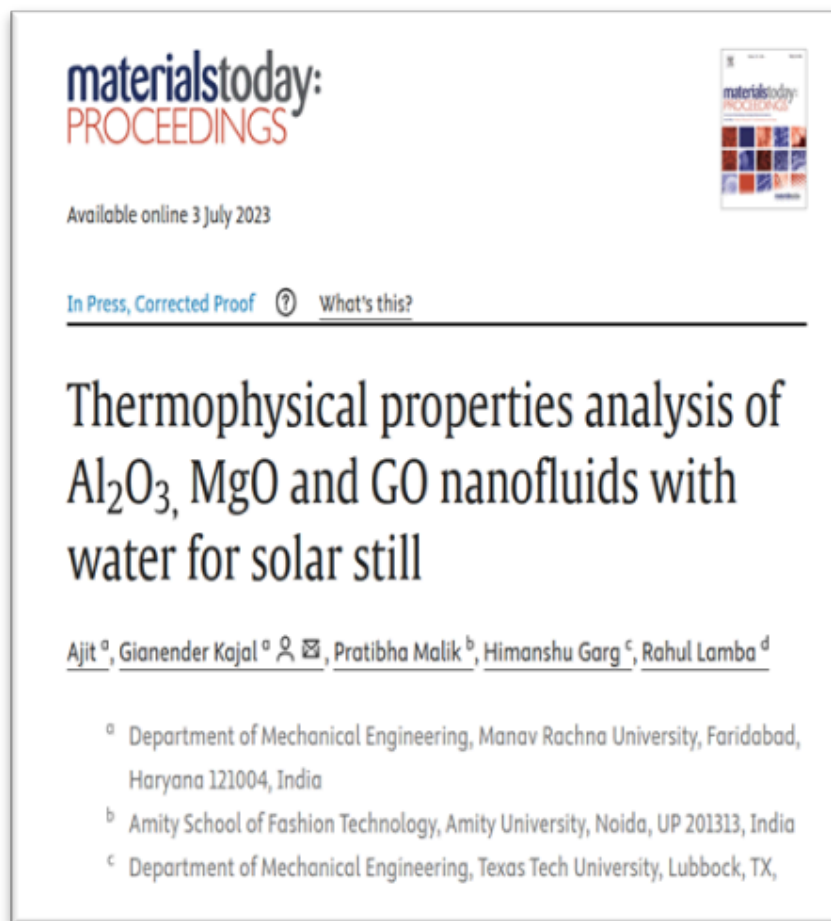
Manav Rachna University offers a compulsory course on Environmental Science to its all program from from engineering and non-engineering domain. The course focuses on the following aspects of SDG 6:

- Understanding need of clean water
- Water pollution and solid waste management
- Conventional and innovative methods of water purification
- Watershed management
- Rainwater harvesting

Research & Development activities related to SDG 6

Following research & development activities are undertaken by faculty members and students of Manav Rachna University:

THERMOPHYSICAL PROPERTIES ANALYSIS OF Al_2O_3 , MGO AND GO NANOFUIDS WITH WATER FOR SOLAR STILL



RESEARCH PAPER PUBLISHED IN INTERNATIONAL JOURNAL OF MATERIAL TODAY PROCEEDINGS

The research work was completed by Dr. Ajit and Dr. Gianender Kajal from Department of Mechanical Engineering, Manav Rachna University. The motive of current study is centred on the extraction of experimental data for the variation of nanofluids and correlations with water for thermophysical characteristics specifically, for solar still applications.

REVIEW ON PHARMACEUTICAL AND ENVIRONMENTAL APPLICATIONS OF GUAVA (*PSIDIUM GUAJAVA*) LEAVES

 <p>ANSF APPLIED AND NATURAL SCIENCE FOUNDATION</p>	<p><i>Journal of Applied and Natural Science</i> 16(2), 607 - 622 (2024) ISSN : 0974-9411 (Print), 2231-5209 (Online) journals.ansfoundation.org</p>
<p>Review Article</p>	
<hr/> <p>A review on pharmaceutical and environmental applications of guava (<i>Psidium guajava</i>) leaves</p> <hr/>	
<p>Anjali Mohapatra Department of Biotechnology, Manav Rachna International Institute of Research and Studies, Faridabad (Haryana), India</p> <p>Vandana Nandal* Department of Biotechnology, Manav Rachna International Institute of Research and Studies, Faridabad (Haryana), India</p> <p>Manu Solanki Department of Biotechnology, Manav Rachna International Institute of Research and Studies, Faridabad (Haryana), India</p> <p>Vinayak Vandan Pathak Department of Chemistry, Manav Rachna University, Faridabad (Haryana), India</p> <p>*Corresponding author : E-mail: vandana.garg.set@mriu.edu.in</p>	<p>Article Info https://doi.org/10.31018/jans.v16i2.5484 Received: February 25, 2024 Revised: April 27, 2024 Accepted: May 02, 2024</p>

REVIEW WORK PUBLISHED IN JOURNAL OF APPLIED AND NATURAL SCIENCE

The review work was accomplished by Dr. Vinayak V. Pathak from School of Sciences, Manav Rachna University. The review highlights the environmental application of Guava leaves for metal remediation from contaminated water.