

# Current Research Activities in Waste Management and Resource Recovery for Reducing Adverse Impact on Health and Environment

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It is indeed with great pleasure that I present to you this latest issue of International Journal of Waste Resources after having successfully released the previous issues in accordance with the publication schedule. Waste resource management is an essential component of general public service mostly supervised by the local Governments. Wide scale collection, transportation lines, efficient treatment, recycling and safe disposal of both domestic and industrial waste is of immense value for sustenance of the environment and safeguarding public health. Lack of adequate and appropriate waste management strategies could lead to environmental pollution and emergence of public health issues. Development of efficient waste treatment methods as well as the reuse and recycling can dramatically reduce the burden of waste management in the modern society. The scholarly research and review articles on technology and management of waste published by the journal lead this approach and forms an important source of knowledge resource for academicians, scientists, environmental engineers, sanitary experts, municipal organizations and associated sanitary workers.

The journal initiated its publication activities in the year 2011 and has to date published ten successive volumes of scientific articles at a pace of four issues per annum. This issue comprises of four original research articles and a commentary. A total of nine authors from different regions of the world including USA, Nigeria, Libya, and Ethiopia have contributed their research outcomes and perspectives. This issue is focused on topics such as how the open drainage into the rivers can affect the health of people, management of infectious medical waste originating from hospital, physico-chemical study of the compost, municipal solid waste recovery and reuse of plastic waste in concrete mix. Ondiveerappan [1] has highlighted the drainage outlet into the Varaha river in Theni district, India which was once considered very sacred and how it affected the people. The pollution resulted in breeding of mosquitoes leading to sickness. The Epidemic Intelligence Service also conveyed to the municipal authorities of the requirement of alternate drainage system. However, it was estimated that the construction of alternate drainage system would be cost intensive. The study shows how financial restriction could hamper waste management and endanger public health.

COVID-19 pandemic and increasing number of infections is highly challenging for developing countries. In this regard hospital waste management policy attains greater significance. Oruonye and Ahmed [2] have presented the importance of hospital waste management in Taraba state. The study, based on interviews and online data, revealed that medical waste was present beyond hospital premises, lack of safe disposal facility and dumpsite. The study highlighted the requirement of special protocol for handling and disposal of infectious medical waste and recommended use of PPE, issue of safe disposal guidelines and establishment of environment department in hospitals. The study emphasized on collective approach by government, NGO's, private sector and communities for finding sustainable solution of waste management.

Belkher [3] performed physico-chemical analysis of composite compost samples originating from a fertilizer production plant. The study revealed that the compost was low in nutrients, contained phytotoxic components and higher content of glass and plastic than the permissible amounts as per International standards. The study identified the lack of accurate segregation as the cause and emphasized on process improvement. Adenaike and Omotosho [4] assessed the resource recovery from solid waste in Nigeria based on a questionnaire survey of the citizen's awareness. The study noted that the dump sites are growing and identified the lack of adequate infrastructure and need for circular economy and inclusion of private sector. This study on municipal solid waste resource recovery is highly relevant for environmental sustainability and economic diversification even while addressing the issues of waste overload and lack of adequate resources. Adela et al. [5] have technically evaluated the potential of partial replacement of coarse aggregate in concrete mix with plastic waste from plastic bags and bottles. The study found that the compressive and tensile strength decreases and adhesion to cement mix also decreases with increasing ratio of plastic waste hence only partial replacement is possible. The study is of immense relevance for plastic waste management in countries having poor waste management facilities.

This issue has comprehensively covered various environmental and health challenges emerging due to lack of adequate and appropriate waste management and recovery strategies and presents the trending

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research activities to find suitable solutions. I herewith extend my sincere thanks and appreciation to all the editor, reviewers and contributing authors for bringing out this issues comprising of quality articles keeping in tune with publication timelines. With the support and guidance of our elite editorial and advisory members, I am very much looking forward to the upcoming issue.

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