

WasteSafe 2019

*Proceedings of the Executive Summary of*  
**WasteSafe 2019**  
**6th International Conference on**  
**Integrated Solid Waste & Faecal Sludge Management in**  
**South–Asian Countries**

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Khulna University of Engineering & Technology, Bangladesh  
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University of Padova, Italy  
International Waste Working Group (IWWG)

## **WasteSafe 2019**

6<sup>th</sup> International Conference on

Integrated Solid Waste & Faecal Sludge Management in South–Asian Countries

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## **Preface**

*Increased population rate, rapid urbanization and industrialization in South-Asian countries create huge challenge for the management of solid waste, faecal sludge and related wastewater. Although cities of these countries have a lower rate of waste generation, the quantum of waste is high owing to their higher levels of population density and the absence of appropriate technology. The tropical climates with a high degree of rainfall and humidity aggravate the problem of solid waste disposal. As cities are becoming more urbanized, their waste composition also changes. The most significant change is the higher part of plastics, multilateral items specially electrical & electronics wastes, consumer products and packaging materials. Recently, environment-friendly management of faecal sludge and wastewater become striking urban sanitation issues in most of the South-Asian countries, like Bangladesh. However, the improvement of existing situations depend completely on the change of the attitude of individuals, community and authority, otherwise environmental degradation will make a threat for sustainability of the inherent socio-economic settings and to achieve Sustainable Development Goals (SDGs) by 2030.*

*This WasteSafe 2019, 6<sup>th</sup> International Conference on Integrated Solid Waste & Faecal Sludge Management in South-Asian Countries, is organized at Khulna, Bangladesh to exchange the views and experiences at international level and to understand the solid waste & faecal sludge management concept as a whole. It is expected that the academicians, researchers, officials and professionals will unfold the prevailing reality in these sectors, innovative ideas, latest findings and experiences in this forum in order to provide the necessary guidelines through which a safe and sustainable system for solid waste & faecal sludge management can be implemented within limited existing social settings, resources and inherent constraints.*

*To address these social and environmental issues, Khulna University of Engineering & Technology (KUET) has taken several initiatives in the past since 2002. In this footstep, WasteSafe 2009, the 1st International Conference on Solid Waste Management was organized successfully in 9-10 Nov. 2009 at Khulna. The success of WasteSafe 2009, encouraged the organizer to continue such activities in Bangladesh in every odd year in a particular period. To materialize such attempt, the WasteSafe 2011, 2013, 2015 & 2017 the 2nd, 3rd, 4th & 5th International Conference on Solid Waste Management in Developing Countries was held successfully at Khulna, Bangladesh on 13-15 February 2011, on 10-12 February 2013, on 15-17 February 2015 & on 25-27 February 2017, respectively. To continue these activities, WasteSafe 2019, the 6th International Conference on Integrated Solid Waste & Faecal Sludge Management in South-Asian Countries has arranged at Khulna, Bangladesh on 23-24 February 2019 with theme of Solid Waste, Faecal sludge and related waste water management. WasteSafe 2019 is jointly organized by Khulna University of Engineering & Technology, Bangladesh; Bauhaus University Weimar, Germany; University of Padova, Italy; and International Waste Working Group (IWWG). Technical papers were invited through website ([www.wastesafe.info](http://www.wastesafe.info)) and information bulletin from the academicians/ researchers/ professionals/ social activists working on solid waste management around the worldwide before the conference date.*

*After review, a total of 68 technical papers including 3 Keynote papers and 1 Theme paper were selected for publications into the Conference Proceedings, Oral Presentation through 1 Inauguration session, 1 Keynote Sessions and 10 Technical sessions. In addition, there is also one poster session which mainly demonstrate the 7 postgraduate level ongoing research topics on faecal sludge management and another two papers. Academicians, researchers, professionals and other personalities from 06 different countries - Bangladesh, India, Italy, Germany, Nepal, and Zimbabwe - submitted their scientific contributions in this conference. Papers have been lightly edited to homogenize the style and to revise the contents based on reviewers' comments. However, each individual author holds the final responsibility for the contents, quality and the presentation of the papers. In this proceedings only the executive summary of the papers are printed and hence published, however, full papers are available in a 'USB Memory Stick' given to the participants.*

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**Muhammed Alamgir**  
Khulna, February 2019