Bioresource Technology: Special Issue on Recent Advances in Anaerobic Digestion

Anaerobic digestion (AD) has for centuries been employed for waste (water) remediation/stabilization and bioenergy production. There are thousands of large-scale and millions of small-scale (household) AD systems currently in operation around the globe. AD, also known as biogas technology, is probably by far the single most important technology for providing the clean renewable energy to millions in the rural areas of the developing countries. AD technology has several inherent benefits ranging from generating renewable energy, remediating waste (water), reducing greenhouse gas emission to improving health/hygiene and overall socio-economic status of rural communities in developing nations. In the context of energy consumption, over 85% of total energy consumed comes from non-renewable sources such as petroleum, coal, natural gas, and nuclear energy. Our dependence on these rapidly depleting non-renewable energy sources has several irreparable consequences such as impacts on economic development, national security, and local and global environments, especially climate change among others. AD technology can provide sustainable, affordable, and environmentally friendly energy resources along with biochemicals using renewable bioresources (agri- and forest residues, organic wastes, high strength wastewaters, animal manures etc). Not to mention, AD/biogas technology has already been making significant impact on the lives of billions of people, especially in developing countries. In recent years, significant advances have been made in AD technology with more emphasis on recovery of resources (energy and biochemicals), biorefinery and wastewater treatment. Thus, this special issue entitled "Recent Advances in Anaerobic Digestion" has been conceptualized to highlights some of the advances. We are especially interested in the high quality research papers and state-of-the-art critical reviews in the following areas:

1- AD process control, bioenergetics and modelling
2- AD and climate change mitigation
3- Anaerobic treatment of micro-pollutants, including pharmaceutical compounds
4- AD biorefinery
5- AD technology and policy
6- Biogas upgrading and utilization
7- Biohydrogen production
8- Digestate utilization (excluding soil/crop applications)
9- Emerging AD technology, including applications of nano-technology
10- High rate anaerobic wastewater treatment
11- High solids digestion
12- Innovative bioreactor design, including anaerobic membrane bioreactor for AD process
13- Life-cycle and techno-economic analysis
14- Microbial fuel cells and bio-electrochemical system
15- Microbiome of AD system
16- Small-scale (household) digester- novel design and operation
17- Sulfidogenic process for wastewater treatment
18- Pretreatment technologies for AD

Timeline

Submission starts on Sep 1, 2019
Submission closes on Sep 30, 2019

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