Anaerobic Granulation - Development & Industrial Applications for High Strength and Recalcitrant Effluents

About the Lecture

Application of anaerobic technology for wastewater treatment has evolved from the earliest septic tanks to advanced treatment systems. Decades of developments and successful implementations in the field of industrial applications have rendered the technology a favorable option. High process efficacy, energy-saving, sludge reduction, generation of biogas energy and emissions reduction are some major intrinsic advantages of high-rate anaerobic systems over the conventional aerobic processes. With respect to sustainability and cost-effectiveness, anaerobic treatment has a much better score than other alternatives. The technology has been proven efficient for treatment of many high strength industrial effluents, such as those from brewery, distillery, food processing, chemicals and pharmaceuticals, and palm oil mill. Recent advancement has further extended the applications in treating recalcitrant effluents containing chloroform, trichloroethylene, chlorinated aliphatics, landfill leachate, pulp and paper mill pollutants, pharmaceuticals, pesticides/herbicides, petrochemicals, coal chemicals, textile and dyestuff.

This talk is presented with an objective of introducing some fundamentals and advancement in anaerobic granulation for wastewater treatment. Cases of industrial applications for high strength and recalcitrant effluents will also be illustrated.

About the Speaker

Dr Kuan-Yeow Show graduated with BEng (Civil) degree from the National University of Singapore in 1988. He obtained Master and PhD degrees in Environmental Engineering in 1993 and 1996, respectively from the Nanyang Technological University, Singapore. He had served as Tenured Associate Professor in Nanyang Technological University, and as Professor and Dean of the Faculty of Engineering & Green Technology cum SP Setia Endowed Chair Professor of Environmental Engineering &

Green Technology, University of Tunku Abdul Rahman, Malaysia. He is currently serving as the Director, Research Institute, Puritek Co. Ltd., Nanjing, and as Visiting Professor of the College of Environment, Hohai University, Nanjing.

Dr Show's areas of specialization include biogranulation technology and high performance anaerobic systems for industrial effluent treatment. He has been awarded/filing several patents including United States Patent, International Patent, European Patent, Singapore Patent, Hong Kong Patent, Korea Patent and China Patent on a biogranulation technology for wastewater treatment. He has published 152 technical papers in refereed international journals and conferences, 86 research reports, 2 editorships for book and journal issue, 2 co-authored books and 30 book chapters.

Dr Show has received several professional awards including the *Singapore National Technology Award 2003*, *Engineering Achievement Awards 2004*, and *The Enterprise Challenge Innovator Award* in 2001 by the Singapore Prime Minister's Office for innovation on biogranulation technology. He received the *2014 National 1000 Talents Program, China* (千人计划国家特聘专家), and *2015 West Lake Friendship Award* (浙江省外国专家西湖友谊奖), signifying the highest honor for foreign experts who have made significant contributions to the economic development in Zhejiang province. In Feb 2016, he was invited for Foreign Experts Recommendation Symposium cum Lunar New Year Dinner with the Premier Mr Li Keqiang held at the Great Hall of People, Beijing (李克强总理人民大会堂春节座谈会及共进晚餐).