

Environmental Engineering Seminar

The Astani Department of Civil & Environmental Engineering presents



Dr. Chi-Chung Tang
Wastewater Research Section Manager
Sanitation Districts of Los Angeles County

Date: December 4, 2015

Time: 3 - 4 pm

Place: SGM 101

Assessing the Feasibility of Recovering Phosphorus at the Sanitation Districts' Wastewater Treatment Facilities

Resource recovery has become an important consideration in the wastewater treatment industry in recent years. As one of the largest wastewater utilities in the United States, the Sanitation Districts of Los Angeles County (Districts) have been producing recycled water for reuse since 1962 and generating electricity from wastewater sludge for over 70 years. A new challenge is whether phosphorus in the Districts wastewater treatment facilities can be technically and economically recovered as fertilizer.

This presentation will provide a general description of the Districts' wastewater treatment operations, discuss the importance of phosphorus removal and recovery in wastewater treatment, describe the conditions required to recover phosphorus from wastewater and whether these conditions are present at the Districts' treatment plants, and introduce the technologies for phosphorus recovery as struvite fertilizer. Two case studies will be presented, one for the Joint Water Pollution Control Plant (JWPCC) in Carson, which treats an average flow of 280 million gallons per day (MGD), and the other for the Valencia Water Reclamation Plant, which treats an average flow of 15 MGD.

About the Speaker

Dr. Chi-Chung Tang has been working for the Sanitation Districts of Los Angeles County (Districts) for over 30 years, and has been the Wastewater Research Section Manager for the last 14 years. The Districts provide wastewater and solid waste management services for about 5.7 million residents in the Los Angeles County. The total flow treated by the Districts' plants is 445 MGD. Staff in the Wastewater Research Section test new treatment technologies and equipment for potential applications at the Districts' facilities; trouble shoot and solve problems encountered during plant operations; and identify opportunities to save energy and chemicals and to recover resources from treatment plant operations. Research results are frequently presented at California and national conferences.

Dr. Tang received a Bachelor of Science degree in Civil Engineering from the National Taiwan University, a Master of Science degree in Environmental Engineering from the University of North Carolina at Chapel Hill, and a Ph.D. degree from the University of Illinois at Urbana-Champaign. He is a registered Civil Engineer in the State of California and a Board Certified Environmental Engineer by the American Academy of Environmental Engineers and Scientists. Under his direction, the Districts won five California Water Environment Association Research Achievement Awards and three American Academy of Environmental Engineers and Scientists Research Awards between 2003 and 2015. Dr. Tang has served as program committee members for WEFTEC, WEF Nutrient Symposium, and WEF/IWA Residuals and Biosolids Conference, and is an adjunct professor at the Graduate Institute of Environmental Engineering at the National Taiwan University. Dr. Tang is a coauthor of over 50 conference proceeding papers, and the lead author on three journal publications.