

CYCLE OF ARSENIC AND ANTIMONY IN BIOMETHANE/LANDFILL GAS OPERATIONS

Speaker

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Abstract

Production of biomethane plays an increasingly important role in suppressing greenhouse effects of anthropogenic methane and expanding renewable energy sources. This lecture will discuss unusual features of the occurrence, mobilization and retention of arsenic and antimony in biomethane production that utilizes methane-rich landfill gas (LFG). Special attention will be given to the sequence of As/Sb reactions involving methylation, reduction, volatilization and sorption by solid state media. The kinetics and mechanisms of release of As/Sb species from solid media used for LFG purification and disposed of in landfills will be presented. Unusual features of the speciation of As and Sb in landfill leachates and LFG condensates will be presented. The newly ascertained and unknown aspects of the environmental chemistry of As/Sb will be discussed as well.

Biography

Dr. Korshin obtained his MSc degree (physics, spectroscopy) from Kazan State University and his PhD (physical chemistry, electrochemistry) from Kazan State Technological University (both in Russia). He started work at the University of Washington in Seattle in 1991 as a postdoctoral researcher. He has been teaching in the Department of Civil and Environmental Engineering since 2000, becoming a full professor in 2007. He has held invited and affiliated positions at the University of Paris Diderot, Australian Water Quality Centre in Adelaide, University of Catania, Italy and Peking University in Beijing. Prof. Korshin is an editor and a member of the editorial board of Water Research. Prof. Korshin's research interests include characterization of NOM, formation of DBPs, on-line methods for water quality monitoring, fundamental chemistry and reactivity of organo-As and organo-Sb compounds, electrochemistry, heavy metals in environmental systems, advanced oxidation and reduction processes. He has published numerous publications in leading journals such as Water Research, Journal of Hazardous Materials, Environmental Science & Technology and others. Prof. Korshin has participated in numerous projects funded by Water Research Foundation, Water ReUse Foundation, National Science Foundation, U.S. Environmental Protection Agency and other organizations.



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**Room 3574 (Lift 27/28),
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