Lessons Learned from Two Decades of Research on Emerging Contaminants

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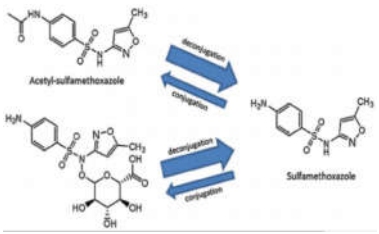
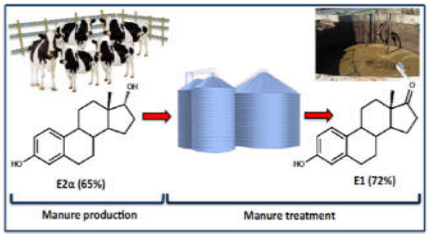
on

May 25, 2015, 1:00 PM, UP MSI Audio Visual Room





Diana Aga is an Endowed Henry M. Woodburn Professor of Chemistry at the University at Buffalo, The State University of New York. She obtained her BS degree in Agricultural Chemistry from the University of the Philippines at Los Banos, and her Ph.D. in Analytical and Environmental Chemistry at the University of Kansas. She was a postdoctoral fellow at the Swiss Federal Institute of Aquatic Science and Technology, Zurich, Switzerland. She is recipient of various prestigious awards, such as the NSF CAREER award, the Alexander von Humboldt Research Fellowship, and the Fulbright Research Fellowship. Dr. Aga is author of more than 100 peer-reviewed scientific articles, and is editor of the *Journal of Hazardous Materials*, published by Elsevier.

In the last twenty years, thousands of research papers covering various aspects of emerging contaminants have have been published, ranging from environmental occurrence to treatment and ecological effects. Emerging contaminants are environmental pollutants that have been investigated widely only in the last 20 years, and include man-made and naturally occurring chemicals such as pharmaceuticals and personal care products and their metabolites, illicit drugs, engineered nanomaterials, and antibiotic resistance genes. The advancement in our knowledge on emerging contaminants has been the result of the appearance of highly sensitive and powerful analytical instrumentation that rapidly developed, allowing trace quantification and identification of unknown contaminants in complex environmental matrices. In this presentation an overview on key research milestones in the area of emerging contaminants, focusing on pharmaceuticals, antibiotics, personal care products, and endocrine disrupting compounds, highlighting some of our own research, will be presented to identify knowledge gaps and future needs where the analytical scientists can contribute to advance our knowledge on the fate, effects, and treatment of Emerging Contaminants in the environment.