

## Lantis I. Osemwengie, Research Chemist, in EPA's National Exposure Research Laboratory

Exposure Methods and Measurements Division

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**Area of Expertise:** As a research chemist, most of my work focuses on the use of modern technology to improve or radically deviate from the antiquated chemical analytical methods developed in the 70's and 80's. As technology improves (computers and software), state-of-the-art instrumentations become available for chemical analysis. Armed with these high-tech instrumentations, I worked to fill the analytical gaps created by previously unknown and classic organic compounds that are ubiquitous in the environment.

Pharmaceuticals and personal care products (PPCPs), polychlorinated biphenyls (PCBs), and hydrofracking chemical compounds present such analytical challenges. Most of the 209 PCB congeners, which are the building blocks for Aroclors®, pose analytical challenges that constitute basic problems in assessing human health and environmental impact. I work to resolve the analytical problems posed by these compounds, using current and best available technology, e.g., GCxGC\TOF-MS. The end products will provide the scientific community with new and high precision analytical methods for collecting quality data for accurately estimating the effects of human exposure to these classes of compounds.

### Select Publications:

- L.I. Osemwengie and W.G. Sovocool, "The mass spectrometric ortho effect studied for all 209 PCB congeners." *International Journal of Mass Spectrometry*, 352 (2013) 51-64.
- M. Abdul Mottaleb, L.I. Osemwengie, M. Rafiq Islam, and G.W. Sovocool, "Identification of bound nitro musk-protein adduct in fish liver by gas chromatography-mass spectrometry: Biotransformation, dose-response and toxicokinetics of nitro musk metabolites protein adducts in trout liver as biomarker of exposure." *Aquatic Toxicology* 106-107 (2012) 164-172
- L.I. Osemwengie and S. Steinberg, "On-site solid-phase extraction and laboratory analysis of ultra-trace synthetic musks in municipal sewage effluent using gas chromatography-mass spectrometry in the full-scan mode." *Journal of Chromatography A*, 2001, 932:107-118.
- L.I. Osemwengie and W.G. Sovocool, "Evaluation of Comprehensive 2D Gas Chromatography-Time-of-flight Mass Spectrometry for 209 Chlorinated Biphenyl Congeners in Two Chromatographic Runs." *Chromatographic Research International*, 2011, Vol. 2011, doi:10.4061/2011/675920

L.I. Osemwengie, "Determination of synthetic musk compounds in sewage biosolids by gas chromatography/mass spectrometry." *J. Environ. Monit.*, 2006, 8:897-903

L.I. Osemwengie and S.L. Gerstenberger, "[Levels of Synthetic Musk in Municipal Wastewater for Potential Estimation of Biota Exposure in Receiving Waters.](#)" <sup>[EXIT]</sup> *J. Environ. Monit.*, 2004, 6:533-539.

View more research publications by [Lantis Osemwengie](#).

### **Education:**

- Ph.D. in Environmental Science (Chemistry Track), 2002, University of Nevada – Las Vegas
- M.S. in Soil Science, 1984, Prairie View A&M University, Texas A&M University System
- B.S. in Chemistry, 1982, Texas Southern University

### **Professional Experience:**

- Research Chemist, U.S. EPA, ORD/NERL/ESD, Las Vegas, Nevada, 2003 – Present
- Chemist, U.S. EPA, ORD/NERL/ESD, Las Vegas Nevada, 1999-2003
- Assistant Chemist, New York City Dept. of Environmental Protection, Queens N.Y., 1992-1999
- Assistant Lecturer, Soil Chemistry, University of Benin, Edo State, Nigeria, 1985-1987
- Research Assistant (intern), Prairie View A & M University, Prairie View Texas, 1983-1984