DEPARTMENT OF CHEMISTRY
TECHNOLOGY

MISSOURI UNIVERSITY OF SCIENCE &

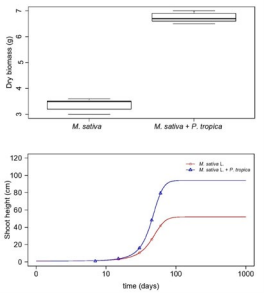
Metabolomics and Environmental Toxicology

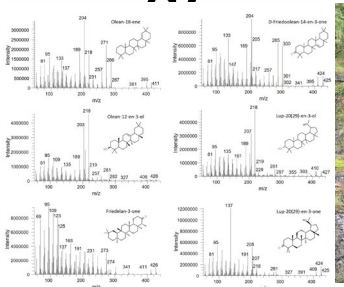
➢ Metabolomics and Exposomics

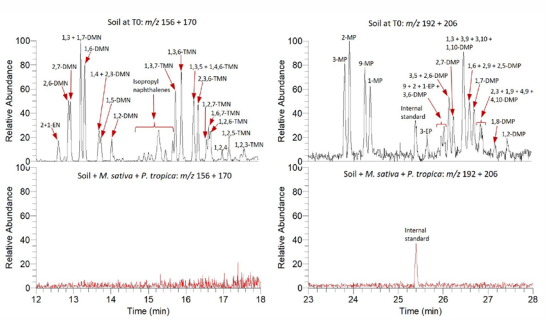
- Mass spectrometry-based metabolomics for disease diagnosis
- GC-MS and LC-MS bioassay method development for animal and plant metabolomics and exposomics studies
- Roles of secondary metabolites in plant disease progression
- Characterizing human exposure to environmental contaminants using targeted and untargeted exposomics

➢ Environmental Toxicology and (Bio)remediation

- Chemical fate and transport in the environment
- Bioaccumulation and toxicity of organochlorine pesticides and polychlorinated biphenyls in whales and dolphins
- Metabolism of exogenous chemicals such as food additives, hydrocarbons, halogenated organics, PFAS and microplastics
- Novel cost-effective and ecofriendly bioremediation methods for organic and inorganic pollutants

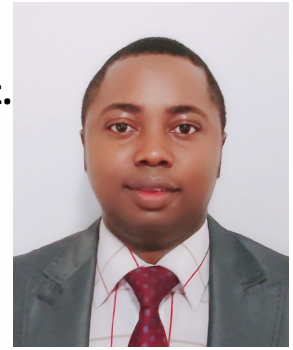






Contact Information:

Dr. Michael Eze, Ph.D. Dr.rer.nat.
Assistant Professor of Bioanalytical and Environmental Chemistry
Department of Chemistry
Missouri S&T
Email: meze@mst.edu
Phone: 573-341-4707



Funding: AAPG Foundation, Bayer Science and Education Foundation (Germany), PESA Australia

Recognitions

- USCIS EB-1A Extraordinary Ability PR for Extraordinary Professors
- 2020 Hot Article Award by the Royal Society of Chemistry
- Carlos Walter Campos Memorial Award for Best International Paper
- Merrill W. Haas Memorial Grant
- Bernold M. Hanson Memorial Environmental Grant

Selected Publications

- ***Eze,** et al. (2022). Bacteria-plant interactions synergistically enhance biodegradation of diesel fuel hydrocarbons. *Communications Earth & Environment,* **3**, 192. doi.org/10.1038/s43247-022-00526-2
- †McCartney, †**Eze,** et al. (2023). A metabolomics assay to diagnose citrus Huanglongbing (HLB) disease and to aid assessment of treatments to prevent or cure infection. *Phytopathology* (in press). doi.org/10.1094/PHYTO-04-23-0134-R

MISSOURI S&T