WESTERN MICHIGAN UNIVERSITY

Western Michigan University
The Department of Chemistry Presents:

Vasileios Anagnostopoulos, PhD

Assistant Professor
Department of Chemistry, University of Central Florida

Biography: Professor Anagnostopoulos received his B.Sc. in Chemistry from University of Patras (Greece) and M.Sc. in Analytical Chemistry (Environmental Track) and Ph.D. in Radiochemistry in 2010 and 2012, respectively, from the same institution. He conducted his postdoctoral studies at Florida International University in projects funded by Department of Energy – Office of environmental Management. He is Assistant Professor at the Department of Chemistry at the University of Central Florida.
He is an expert in environmental radiochemistry and his group's research focuses on the contaminant behavior in the mineral-water interface, as well as nuclear fuel disposal and design of materials for radionuclide retardation under different environmental conditions, such as far field and repository. He has led projects funded by the Department of Energy, the Nuclear Regulatory Commission and the International Atomic Energy Agency.

Title: "Geochemical controls of manganese oxides in the mobility of anionic contaminants in the environment: the case of iodine and technetium"

Manganese oxides are minerals abundant in nature that influence the stability of any redox sensitive metal and metalloid reduced species in the environment due to their strong oxidizing properties. They are able to oxidize U(IV), Cr(III), As(III) and many others to more soluble and more importantly more toxic higher valence species. Manganese oxides are ubiquitous due to regeneration of Mn(III) minerals formed by abiotic processes or by microorganisms.

The presentation will start by giving an overview of the geochemistry of manganese minerals and the role they play in the environment, either by oxidizing, and therefore mobilizing, reduced metal and metalloid species or by preventing the reduction of soluble contaminants by minerals like ferrous iron oxides, thus hindering natural attenuation. It will also present my research group's studies on the redox transformations and speciation of technetium (Tc-99) and iodine by manganese minerals and the environmental implications of this process. Technetium and iodine are two major risk-driving contaminants across the Department of Energy Nuclear Legacy Sites complex due to their high half-lives and anionic nature, which makes non-reactive towards natural substrates.

Monday, April 19th at 4pm

Join Zoom Meeting link:
https://us02web.zoom.us/j/81359137631?pwd=ZUFJL0FiYXYyVXpFRWUzSm1IaHBCZz09

Meeting ID: 813 5913 7631
Passcode: 9pG5q6