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# TCSUH Special Seminar

## Nanosafety Studies and the Role of Nanomaterial Physicochemical Characterization in Complex Matrices

Friday, October 14 2016  
HSC 102: 12:00PM – 1:00PM



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### **ABSTRACT:**

With the advent of the discovery of nanomaterials (NMs), possessing properties fundamentally different than their bulk counterparts, there has been a rush in the industry to produce these new materials and apply them in consumer products. Such products touch diverse areas such as semiconductors [Piccione 2012. Nat Nano 7: 640], medicine [Wang 2009. J Phys Chem C 113: 3717], cosmetics [Calzolari 2012. Food Addit Contam A 29: 1183], and food [Napierska 2012: Part Fibre Toxicol 7: 39]. Correspondingly, concerns have been raised due to the unprecedented progress uncoupled with a proper understanding of the possible associated risks. For example, there are reports pointing out that ENMs may be more toxic than their larger counterparts [Oberdörster 2001. Int Arch Occup Environ Health 74 1]. In this regard, the need to develop techniques assessing physicochemical characterization of NMs has become paramount as complimentary tools of nanosafety assessments. In this seminar, it will be covered the recent advances of some characterization techniques, including Ion Beam Analysis, to analyze NMs in complex (organic) matrices in the field of Nanosafety.

**BIO:** Dr. Omar Lozano base formation is Physics Engineering, obtaining his B.Sc. in 2004 from the Monterrey Institute of Technology (Tecnológico de Monterrey, Mexico). He moved then to the University of Houston to pursue master and doctorate studies in Physics in Dr. Wei-Kan Chu's group, specifically in thin film deposition of transparent conductors, characterizing them through a series of techniques such as RBS and PIXE of Ion Beam Analysis (IBA). He obtained the master degree in 2006 and PhD in 2009. He moved then to the University of Namur (Belgium), where he performed nanotoxicology and nanosafety studies in a multidisciplinary team, focusing mainly in physicochemical characterization (such as IBA) of nanomaterials in complex matrices and development of devices and standard practices for such purposes. In the meantime, in 2015 he got an MBA. In that same year he moved back to the Monterrey Institute of Technology (Tecnológico de Monterrey, Mexico), where as an Associate Researcher he studies and develops along a multidisciplinary team nanotechnology-based solutions to cardiovascular diseases.

*Persons with disabilities who require special accommodations in attending this lecture should call (713) 743-8213.*

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