CHEMISTRY DEPARTMENT SEMINAR

Acoustofluidics for the removal of microplastics in water and the detection of viruses

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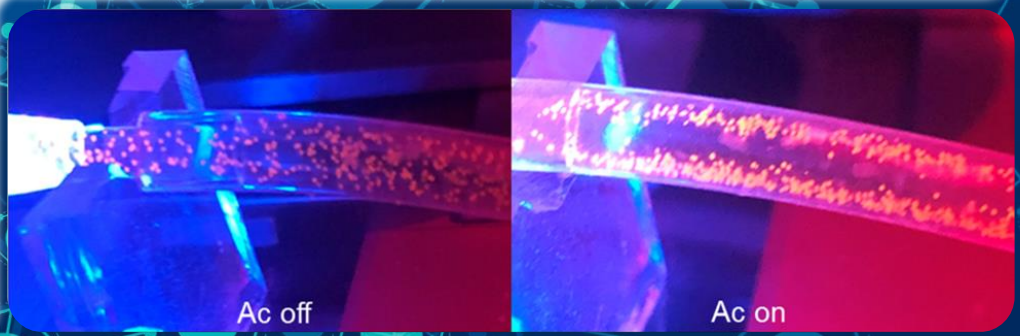
Acoustofluidic devices use standing acoustic waves to manipulate particles in a flow-through format. The ability to control and concentrate particles precisely in these devices can offer new tools in chemical analysis. In this talk, I will discuss our progress in developing new acoustofluidic devices to isolate microplastics and detect viruses. The remnants of degraded plastic wastes in aquatic systems have threatened life on earth due to their bioaccumulation and capture of heavy metals. The degraded plastics smaller than 5 mm in size are known as microplastics (MPs). We explore the capability of acoustofluidics to address one of the major limitations in MPs removal, the inability to simultaneously remove all types and sizes of microplastics in aquatic media. In this presentation, I will discuss how we use acoustofluidics technology to remove environmentally relevant microplastics in aqueous media with different densities and the scaling up of the technique for large-scale removal. In my presentation, I will also discuss the implementation of acoustofluidics to detect viruses. The utilization of acoustofluidics for detecting viruses can provide automated, label-free, on-site, and cost-effective detection. In addition, concentrating viruses' acoustofluidics will enhance early detection. I will present our ongoing work on developing an acoustofluidic-based virus detection method.



November 11h @12 pm – Lopez 106

Meeting ID: 951 3765 0274 https://zoom.us/j/95137650274