

Title: Drinking water treatments and micro(nano)plastics.

Abstract:

Plastic pollution has increased in line with the increased plastic production over the last 60 years, having reached all environments globally and potentially affecting drinking water supplies. Microplastics have recently been detected in potable water sources and bottled and tap water for consumption, leading researchers to question the efficacy of current water treatment practices. While the magnitude of particulate plastic concentrations and compositions varied by water source and location, it is hypothesized that all waterways will continue to experience an influx of particulate plastic (including down to the nanometer scale) as degradation of larger plastic items continues. In this talk, I will share an overview of the current knowledge of the presence of plastic particles in Drinking Water Treatment Plants (DWTPs). Also, the outcome of our project regarding the behavior of nanoplastic particles during ozonation and filtration systems will be presented.

About speaker:

Gerardo Pulido-Reyes completed his Doctorate at the Chemical Engineering, Environmental Toxicology and Global Change group (Universidad Autonoma de Madrid, Spain) in 2017. For his dissertation, he focused on (eco)toxicological assessment of different engineered nanomaterials from inorganic nanoparticles made of iron, cerium oxide or titanium dioxide to organic nanomaterials such as dendrimers. As a postdoctoral researcher in Universidad de Alcala (Spain) and, now, in Eawag (the Swiss Federal Institute of Aquatic Science and Technology), he is tackling the issue of plastic pollution. On one hand, he is interested in assessing the environmental risk of micro/nanoplastics, the influx and transfer of plastic particles into the different environmental compartments and knowing the potential effects to aquatic organisms. On the other hand, he is also working in technical systems, evaluating the efficiency of current drinking water treatments to remove nanoplastic particles.