



CYCLE DE CONFÉRENCES DE CHIMIE

*Avec le concours de : Université Clermont Auvergne
INP Clermont Auvergne*

Jeudi 1^{er} octobre à 16 h

Amphi Rémi (site des Cézeaux)

Monica PASSANANTI

Institute for Atmospheric and Earth System Research (INAR), University of Helsinki, Finland

Degradation of micro- and nanoplastics at the water-air interface: challenges and implications

Micro- and nanoplastics (MNPs) are widespread across environmental compartments. Due to their low density, they float at the water surface, where they can interact with gas-phase oxidants like ozone, light, and photogenerated reactive species. We investigated air-water interface reactions of small microplastics (<30 μm) and nanoplastics (<1 μm), focusing on ozone uptake and light effects. Ozone uptake varied with temperature, concentration, and plastic type, with partial oxidation and morphological changes observed in some cases; mass spectrometry indicated that degradation products in the gas and aqueous phase arose from polymer chain scission. These results show that MNPs can undergo heterogeneous reactions with gas-phase oxidants at the air-water interface, with surface modifications potentially affecting their capacity to act as condensation nuclei.

Coordinateurs : Alain DEQUIDT ☎ 33 473 407 194 courriel : alain.dequidt@uca.fr

Kévin LEMOINE ☎ 33 473 407 513 courriel : kevin.lemoine@uca.fr

Institut de Chimie de Clermont-Ferrand (ICCF-UMR 6296)

Université Clermont Auvergne, 24, avenue Blaise Pascal, TSA 80026 63178 AUBIERE cedex-France