Complete Characterization and Chemical Identification of Microplastics Using FTIR Imaging Technologies

In recent years, plastic pollution has received increasing interest from researchers, politicians, and the public. Consumption of plastics has been growing for decades and now small plastic microbeads are also used in everyday products such as cosmetics, toothpaste and personal care products. Contamination in our waterways, air and food (e.g. bottled water) from these microplastics (1 microns to 5 mm in size) is gaining significant public interest due largely to its emergence as an environmental and potential human health threat.

Researchers across the world are now working towards standardized analytical solutions to best characterize these particles in terms of chemical identity, size, shape, and total mass.

Leading this initiative, Professor Jes Vollersten of Aalborg University in Denmark, is developing sample preparation, data measurement and analysis protocols using cutting edge mobile FTIR and FTIR imaging technologies. He has developed an approach that allows for rapid characterization and chemical identification of macro particles (greater than 5mm in size) measured at the point of collection using mobile FTIR and for microparticles (down to ~10 microns), using laboratory based FTIR imaging.

Attendees can expect to learn more about:
- Use of mobile FTIR for field measurements of macroplastics
- Use of FTIR imaging for rapid characterization of microplastics larger than 10 microns
- Characterization possibilities for particles smaller than 10 microns
- Optimized sample preparation and data analysis strategies and tools

Who should attend
- Microplastics researchers
- Those interested in contamination of wastewaters, seawater, fresh water, air, sediments, and food (such as fish, shellfish, crustaceans and bottled water)
- Researchers interested in the transport of organic pollutants, potentially as adsorbed on microplastics