

Invitation to Agilent Live Webinar / Microplastics Webinar Series #2

Development of Analytical Methodology for Microplastics using Pyrolysis (Py)-GC/MS

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Development of Analytical Methodology for Microplastics using Pyrolysis (Py)-GC/MS

Agilent invites you to the first webinar of the two-part Microplastics Webinar Series! Join us for the joint presentation brought to you by Frontier Labs and Agilent for the Development of Analytical Methodology for Microplastics using Pyrolysis (Py)-GC/MS.

Abstract

Plastic waste that accumulates in the oceans is subjected to degradation from weathering over the years. The most stable and ubiquitous polymers persist in the environment, but they breakdown into small polymer fragments known as microplastics (MPs). MPs have become one of the greatest recent environmental issues due to possible risks to ecosystems and human health along with the awareness that large quantities have already accumulated in the global environment. As a result, a range of studies has been conducted on the distribution and abundance of MPs in the environment.

Pyrolysis gas chromatography/mass spectrometry (Py-GC/MS) is a complementary technique for qualification and quantification of MPs as it can analyze samples for MPs, regardless of their color and size. Py-GC/MS only requires a trace amount of sample and no sample pre-treatment for measurement of all polymer sizes collected during environmental sampling. Py-GC/MS method optimization for MPs in environmental samples includes addressing the varied polymer types and concentrations, the challenges for selection of reliable indicative peaks for qualification, the potential for secondary reactions among pyrolysates, and lower detection limits. In this study, the recent advancements and challenges are reported for the application of Py-GC/MS systems in the analysis of MPs.

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Presenter

Terry L. Ramus, Ph.D.
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Dr. Ramus received his Ph.D. in Analytical Chemistry from Oregon State University in 1985. Over the last 35 years, Dr. Terry Ramus has done research in gas phase analytical techniques with an emphasis on applications of GC/MS for the industrial and engineering sectors. For over 20 years now, research has emphasized the characterization of materials, polymers and coatings. This effort has centered on Pyrolysis-GC/MS as the primary instrument for these characterization and deformulation efforts.