

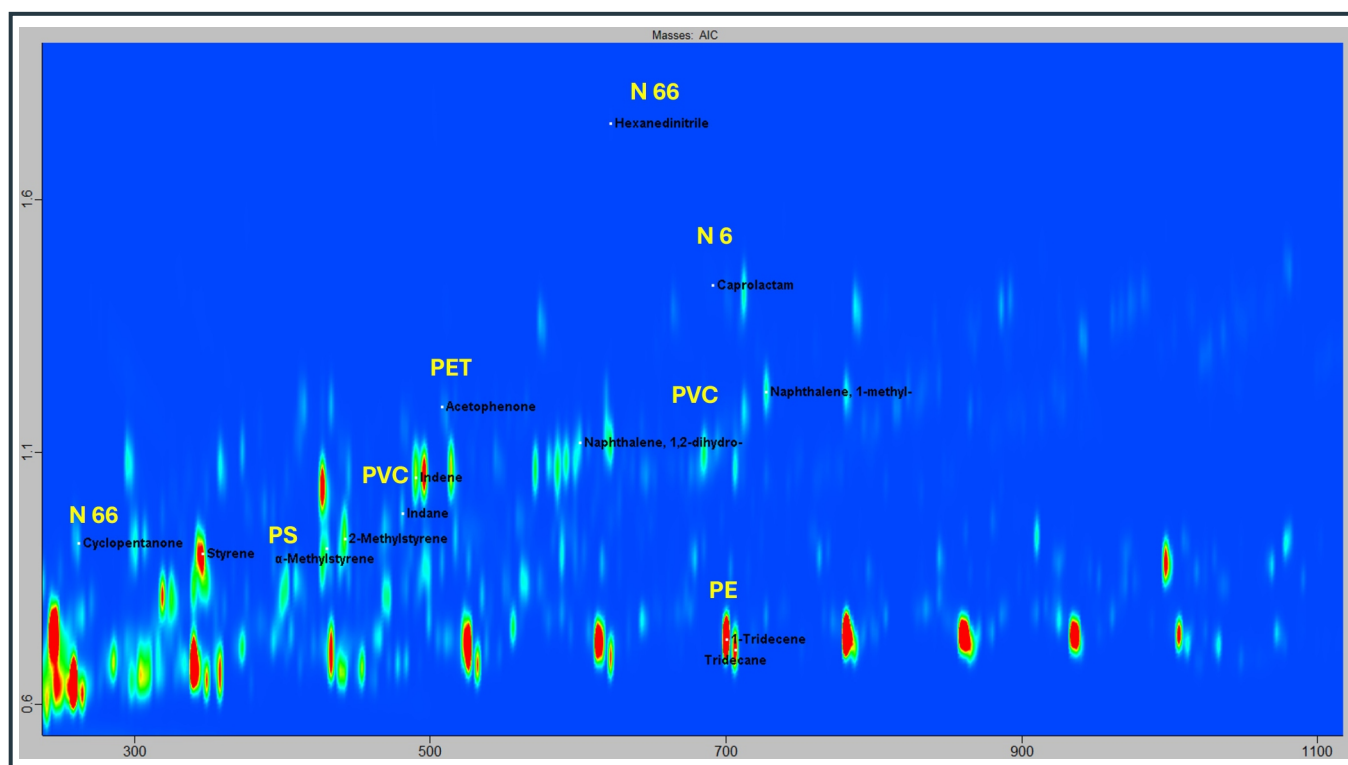
Instrument: LECO Pegasus BTX 4D

Characterization of Microplastic Pyrolytic Markers in Carotid Arterial Plaques using Pyrolysis-GCxGC-TOFMS

LECO Corporation; Saint Joseph, Michigan USA

Key Words: Microplastics, GCxGC, TOFMS, Pyrolysis, Polymers

Growing concern over microplastics in human tissue calls for analytical methods with high sensitivity and strong polymer specificity. Conventional pyrolysis GC-MS is widely used, but limited separation can obscure complex mixtures and make closely related polymers difficult to distinguish. Pyrolysis GCxGC-TOFMS provides substantially improved chromatographic resolution for trace, non-targeted characterization, helping to reveal additional pyrolytic markers and reducing the possibility of false positives in biological matrices.



Pyrolysis-GCxGC-TOFMS contour plot showing detection and characterization of pyrolytic markers for Nylon 6, Nylon 66, Polystyrene (PS), Polyethylene (PE), Polyvinyl Chloride (PVC), and Polyethylene Terephthalate (PET) that were detected in a complex arterial plaque matrix.