

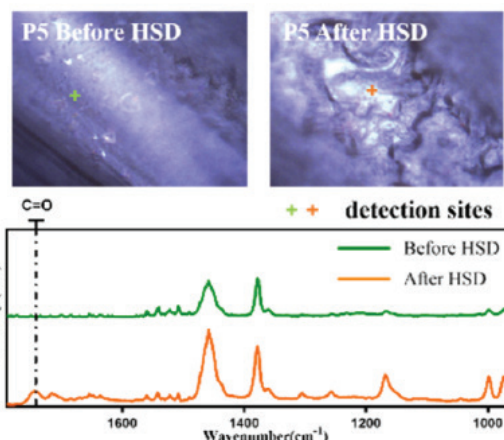
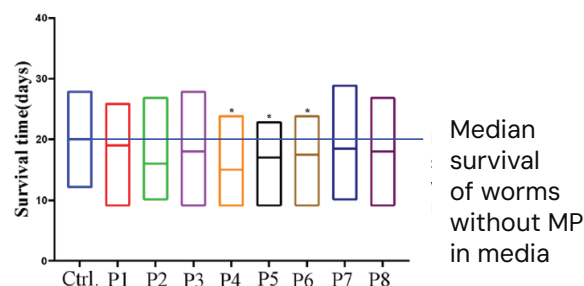
Microplastics released from disposable medical devices and their toxic responses in *Caenorhabditis elegans*

Zhong et. al found that the smaller the particles, the more ecotoxic they become. This novel O-PTIR technique provides the precise chemical identification of these small fragments towards identification of their original sources. Microplastic fragments smaller than 5 μ m can be identified in high confidence due to this method.

Microplastic fragments increases germ cell apoptosis (programmed cell death) and disrupts intestinal barriers in toxin-sensitive *C. elegans*, thus shortening their life span.

This study determined that experimentally heated and deformed medical devices can be directly analyzed by the submicron O-PTIR mIRage microscope, while retaining high spectral quality. Thus, virgin samples could be probed directly for capturing the most accurate representation of the heat treatment to both the plastic surface and the released microplastics fragments.

Data from the article suggests microplastics from disposable polypropylene medical devices are more toxic than microplastics released from PVC-based devices. Therefore, understanding the chemical nature of the microplastic fragments will provide a profound design direction on device safety and end-of-life disposal strategy.



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