

# New method for detecting microplastics beneath our feet

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Researchers from CRC CARE have developed a new method to detect microplastics in the ground using infrared light and powerful visualisation software.

Dr. Megharaj Mallavarapu says that this research fills an important knowledge gap as most research on [microplastic](#) detection has focused on the marine environment, not on the land.

"There are vast quantities of microplastics that have accumulated in the ground. Microplastics present a potential health risk as they can carry and then leach harmful contaminants, this could be especially important when it comes to agricultural soil," he says.

Dr. Mallavarapu, a Professor of Environmental Biotechnology at the University of Newcastle's Global Centre for Environmental Remediation, says this new method is non-destructive, simpler than other similar methods, and can work for soil, sand, water and even biosolids.

His colleague and lead researcher on the project, Dr. Cheng Fang, will present to an international conference in Adelaide today this extremely accurate method that can detect plastics as small as one micrometer in size.

By using Raman spectroscopy to process the information, the researchers can map and identify simultaneously up to five types of microplastics present in a sample. This includes PET, PVC, polystyrene, polypropylene and polyethylene. "These different types of plastic have different spectral properties, which is how this technology is able to identify them," says Dr. Mallavarapu.

"Once we identify the kinds of plastic, we can begin to identify the risks they pose to health and environment, and then plan remediation. This is the [first stage](#): before you investigate what the chemical does, you need to first measure and detect it," says Dr. Mallavarapu.

Provided by CRC for Contamination Assessment and Remediation of the Environment (CARE)

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