

RESEARCH DIRECTIONS

Sound Remediation of Contaminated Soil

Associate Professor Chin Leo from the School of Engineering is exploring the potential for using high powered ultrasound (HPU) to clean dioxin contaminated soils and sediments, through a NSW Government Environmental Trust Environmental Research Program Seeding Grant project.

'Dioxin is an industrial by-product of chemical processes which can be harmful to the environmental and human health when it accumulates in soils, fish and wildlife' says Associate Professor Leo. 'High power ultrasound is a form of ultrasound (sound waves that have a frequency higher than human hearing), that have been used for many years in industrial processes such as cleaning, welding, soldering, and machining. However, the potential to use HPU in cleaning up the environment is a new idea, and one that will be tested in this project, in conjunction with CSIRO.'

The project will focus on demonstrating that the clean-up of soils and sediments contaminated by hazardous dioxin using HPU will produce harmless residues or by-products and prevent release of harmful pollutants into the environment during the decontamination process. Dr Leo and the CSIRO team will use sand, and also collect soil samples from around the Parramatta River catchment, and treat these with HPU after spiking the samples with dioxin. Samples will be treated with HPU at different intensities and various time periods, then analysed to determine the most effective treatment combination.



This project will attempt to achieve complete eradication of the pollutants leaving soils clean and free of hazardous chemical residues. These results will then be applied directly in the environment, and will be tested against other harmful pollutants, in the hope of leaving the environment healthy not just in the short-term, but for future generations.

Project Title: Remediation of dioxin-contaminated soils by high power ultrasound
Funding has been set at: \$15,700
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