



# Remediation of mercury

## THE EXISTING PROBLEM OR ISSUE

Approximately one third of mercury emissions are due to contamination from artisanal gold mining. Terrestrial environments offer an opportunity to remediate contamination.

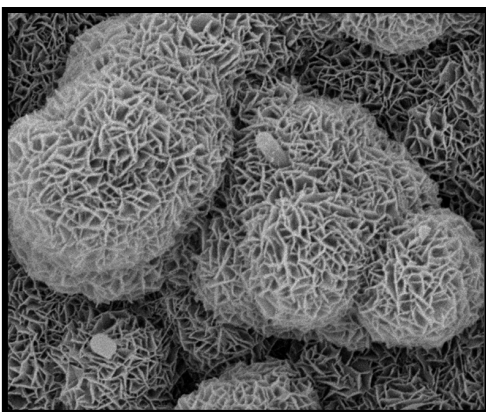
Two current remediation strategies include Physico-chemical and biological methods. Physico-chemical methods are used in engineering, thermal, removal, immobilization, soil washing, isolation, vitrification, adsorbants and others. The biological method is used in phytoremediation, bio-augmentation and bio-stimulation.

However physico-chemical strategies are expensive, require advanced expertise, can be permanently detrimental to soil and use harsh solvents.

Phytoremediation requires secondary processing, ongoing management and is geographically limited. Bacterial inoculants are difficult to deliver to remote and heterogeneous sites.

## OUR SOLUTION

A method of binding cells on a bulk natural substrate using a biopolymer. This facilitates delivery of microbial loads to contaminated sites. Cells have mercury volatilising capability, and a coconut mat has been produced which captures the mercury gas for subsequent mercury recovery. The team has also proven that the immobilizing cells remain viable after prolonged storage.



ADVANTAGES	BENEFITS
Binding capacity	Zeolites have a huge surface area to volume ratio, allowing for high density immobilization of cells
Eco-friendly	No harsh chemicals required
Cost	Inexpensive
Easily transferable	Not limited geographically Finished product can be readily stored and transported
Volume	The robust nature of the product and facile techniques allow for ease of scale up.

## APPLICATIONS

- ✓ Mercury contaminated soils
- ✓ Mining
- ✓ Industrial
- ✓ Government

## INVENTORS

Damien McCarthy  
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## INTELLECTUAL PROPERTY POSITION

PCT patent application filed  
WO 2019/046882

## COMMERCIAL OPPORTUNITY

Seeking a partner interested in commercialising or licensing this technology.

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