

# Recovering high value metals for industries while protecting the environment

December 30 2014

---



Researchers at the University of Guanajuato (UGTO), in middle Mexico, developed an extraction column which recovers metals companies use in their production processes, thus avoiding environmental pollution and reducing economic losses.

The column operates under the principles of liquid-liquid extraction and seeks to recover metals with high added value. The technology is already at laboratory prototype stage and researchers are in the process of obtaining a patent.

Carlos Benito Martínez Pérez, PhD student of Science in Chemical Engineering at UGTO and project participant, explains: "The process begins with the extraction; the influent enters the top of the column, makes contact with an organic formulation containing the extracting agent that is highly selective for the metal it seeks to recover. When leaving the column, the effluent will be virtually free of metal.

"We do this verification through an atomic absorption equipment. When the metal is in organic phase we de- extract and accumulates in another aqueous phase solution."

The technology may be employed by any [company](#) or industry if their production processes use some type of metal, because the extraction column for the recovery of metals with high added value reduces [economic losses](#) and pollution.

The concentrated metal in the solution is the one highly valued by the UGTO, which is why it is called "of added value," because the metal in the solution could be incorporated back into a production process or sold to other companies, with no waste.

Within the state of Guanajuato, many companies were releasing metals in their production processes, thus, generating some pollution; using this process, companies fines for polluting would be avoided and a better status in the enterprise market achieved with waste treatment.

Companies that may be interested in this technology are focused on the production of automotive parts, electronics, tannery and painting, among

others that use [metal](#) in their processes.

Provided by Investigación y Desarrollo

Citation: Recovering high value metals for industries while protecting the environment (2014, December 30) retrieved 24 April 2024 from <https://phys.org/news/2014-12-recovering-high-metals-industries-environment.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.