Metal Scavengers Based on Alkane Diamine and Alkane Dithiol-Modified Poly-1,4-Dihydropyridazines and Polypyridazines.

UA ID Technology #ua17-128

Title: Metal Scavengers Based on Alkane Diamine and Alkane Dithiol-Modified Poly-1,4-Dihydropyridazines and Polypyridazines

Invention: The invention is a new class of metal ion scavengers that can bind to transition, lanthanide, and actinide metals from water or organic solvents. This new class is 3,6-diaminoalkane, dithiolkane substituted 1,4-dyhidropyridazine, or 3,6-dipyri-2-yl-4,5 pyrazidine compounds.

Background: Resins are important for removing toxic heavy metals from drinking water due to pharmaceutical manufacturing, semiconductor manufacturing, mine effluent, and electrochemical processing. Current resins are limited in capacity and binding activity.

Applications:
- Waste removal
- Toxic manufacturing
- Water treatment

Advantages:
- Can pick up to 4 mmoles of metal per gram of resin compared to current options which are limited to only 2 mmoles of metal per gram
- Allows for flexible preparation such as a coating surface, gel, or a packed bed of resin spherical particles

Licensing Manager:
Paul Eynott

Contact Robert Sleeper
Licensing Manager
roberts@tla.arizona.edu
(520) 626-4604

The University of Arizona, Tucson, Arizona
PaulE@tla.arizona.edu
(520) 471-2687

Inventors

Douglas Loy
Professor, 20 Materials Science & Engineering

Robb Bagge
Graduate assistant, CBC