



Methods and Compositions for the Removal of Mercury from Gases

UW ID: 15-059

Inventors:

Robert Corcoran
Kaspars Krutkramelis
Rodolfo Monterrozo

Patent Status:

Utility Patent

Description of Technology

Burning carbon fuels like coal emits a variety of substances harmful to the environment and humans. One of the most dangerous substances emitted is mercury, especially elemental mercury because it is difficult to capture. The threat mercury poses is so substantial that the United States government has imposed increasingly stringent regulations regarding how much mercury can be emitted by power plants and other entities that burn materials containing mercury. Limiting mercury emissions to satisfy regulatory requirements has spawned a multi-billion-dollar mercury capture industry. The current ways to capture the mercury use either activated carbon, which is expensive, or bromine, which is toxic and dangerous.

Researchers at the University of Wyoming invented an approach for removing contaminants, such as mercury, from fluids. This approach removed elemental mercury from the gasses emitted by carbonaceous fuels without the need for relatively expensive activated carbon. The approach contacts the contaminant with a trihalide salt fluid causing a reaction that oxidizes the elemental mercury and deposits it into the salt. The oxidized mercury is then removed from the salt fluid by running it through an organic and/or halogenated hydrocarbon solvent. The solvent is then evaporated off to leave just the oxidized mercury salts. This method is both less expensive and less dangerous than current approaches to capture mercury which makes it a great replacement for many existing applications.

Applications

Power plants and other carbonaceous burning facilities can implement this technology to capture their mercury in a safe and cost-effective manner. Since the government has placed stringent regulations on the emission of mercury, many opportunities have opened up for businesses to fit the need for capturing mercury. Licensing this technology would give the licensee a leg up on the competition in capture technology and allows for higher profit margins than using current approaches.

Features & Benefits

- Innovative way to capture mercury from exhaust gases
- Less expensive than currently methods using activated carbon
- Less dangerous than bromine

Contact Us:

**Wyoming Technology Transfer and
Research Products Center**

1000 E. University Ave
Laramie, WY 82071

Tele: 307-766-2520

Fax: 307-766-2530

Email: Wyominginvents@uwyo.edu