conferenceseries.com

8th World Congress and Expo on Recycling

June 25-26, 2018 | Berlin, Germany

Recycling valuable products from mercury capture processes

M Rosa Martínez Tarazona, M Antonia López Antón, Cristina Antuña, Elena Rodríguez and **Roberto García**
Instituto Nacional del Carbón - CSIC, Spain

One of the options for reducing the industrial emissions of mercury in gas phase is to retain this element and its compounds on solid adsorbents. The adsorbents evaluated to date, can be used by injection in a gas stream, or in fixed or fluidized beds. In both cases, there are different solids that can be considered. The most commonly used are activated carbons and carbon materials, usually doped with reagents that enhance the capture of mercury species on their surface. The use of solid adsorbents for the capture of mercury in the gas phase entail some difficulties and limitations, of which cost and environmental assessment of the produced wastes are important drawbacks. It is very important to bear in mind that in any adsorption process for the elimination of a pollutant, the production of a contaminated waste needs to be avoided. For this reason, the development of a process in which a regenerable adsorbent is used and, at the same time, most of the products involved are recovered, is a promising recycling process. The process which is the subject of this work, schematized in figure 1, consists in using of a carbon material doped with a noble metal as adsorbent. This material employed in a bed, can be regenerated over a number of cycles and, when exhausted, it can be subjected to simple processes allowing the recovery of most of the valuable products involved in the process. To attain this goal, on one hand the mercury present in the contaminated gas is concentrated and condensed as liquid mercury. On the other, the carbon material supporting the noble metal can be burned away to recover the impregnated gold. In this way, the depleted material and waste products can be converted into valuable remanufactured products, turning waste into a resource.

rmtarazona@incar.csic.es

International Journal of Waste Resources
ISSN: 2252-5211

Recycling Expo 2018
June 25-26, 2018

Volume 8

Page 88