TECHNOLOGY FOR PRODUCTION OF HIGH COST POROUS ADSORBENTS FROM ZINC SCRAPS

BRIEF

The MOFs are high cost reagents and have wide applications in catalysis, gas storage, sensor development, molecular separations. The production of MOFs from cheap raw materials, such as battery scraps offers significant economic benefits to the recycling industry.

MAIN FESTURES

- **Production of MOF (i.e., 2-methylimidazolate zinc salt, or ZIF-8) at a cost of Rs. 20,000 per kg. The market price of the product is Rs. 6-10 Lakhs per kg.**
- **Almost 99% recycling of zinc from spent batteries and other solid wastes to form a high cost end-product**

SPECIFICATIONS OF ZIF-8

Molecular Formula: $C_8H_{10}N_4Zn$

Molecular Weight: 229.60

Purity- 99.9%

Surface Area- Approx. 1500 m^2/g

Particle Size- 0.5-4 µm

Pore Size ~ 10 Å

Appearance- White color Powder

APPLICATIONS

SEPARATIONS (PARAFFIN ISOMERS, ALKANES), SENSORS, GAS ADSORPTION, DRUG DELIVERY

USERS

CHEMICAL INDUSTRY

PETROLEUM INDUSTRY

ENVIRONMENTAL ENGINEERS

POLYMER INDUSTRY