

NOVEL DEVICE FOR SIMULTANEOUS DETERMINATION OF ADSORPTION OF BINARY GAS MIXTURES ON SOLID ADSORBENTS

P PATENTED TECHNOLOGY



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ABSTRACT

Researchers of the University of Alicante have developed a novel device able to determine individual amounts of gases in a binary mixture which are being adsorbed simultaneously on a porous solid.

It is a practical and economical device that reduces drastically analysis time and it can be used in the following industrial sectors: environmental, energy, catalysis, gas storage, and so on. Both factors make its commercialization very easy. Researchers are looking for companies acquiring this technology for commercial purposes.

ADVANTAGES AND INNOVATIVE ASPECTS

MAIN ADVANTAGES

- This equipment is economical, practical and easily marketable.
- Analysis time of the experiment can be drastically reduced compared to the current methods and devices.
- Both components of the mixture are exactly at the same equilibrium conditions (temperature and pressure).
- The same region of the sorbent solid is being analyzed simultaneously (it does not happen with commercial devices).
- The results obtained with this device are real, while the ones obtained with the current methods are based on theoretical simulations, which are not very precise.
- Calibration procedure is only necessary once a year.

INNOVATIVE ASPECTS

- This system is thermostated and temperature can be adjusted to the desired experimental conditions.
- It is possible to implement in the volumetric device other suitable elements to determine density (e.g., elements based on measurement of resonant frequency, and so on).

MARKET APPLICATIONS

This technology is useful for **determining the applicability of porous solids** to the most suitable treatment of gas mixtures in **different industrial processes**:

- Oil and Gas Drilling, Exploration and Extraction Equipment:
 - Exploration equipment instrumentation.
- Chemicals and Materials:
 - Industrial chemicals.
- Pollution and Recycling Related:

- Air filters and air purification and monitoring equipment.
 - Other pollution and recycling related.
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COLLABORATION SOUGHT

Companies interested in acquiring this technology for commercial purposes are sought:

- Licensing agreement.
 - Technical cooperation (joint further development or adaptation to specific needs).
 - Manufacturing agreement (transfer of knowledge).
 - Financial resources.
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