

# 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.

## TECHNOLOGY 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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