LABORATORY DEVICE TO MEASURE GAS DIFFUSION COEFFICIENTS AT REAL CONDITIONS

TECNOLOGÍA PATENTADA

DATOS DE CONTACTO:

Research Results Transfer Office-OTRI
University of Alicante
Tel.: +34 96 590 99 59
Email: areaempresas@ua.es
http://innoua.ua.es

RESUMEN

The Applied Petrology Group of the University of Alicante has developed an automatic device and a method to determine gas diffusion coefficients of single gases from a gas mixture under atmospheric conditions. The device works in a wide range of relative humidity and temperature and can be employed to test any permeable or porous material.

The procedure allows to calculate the gas diffusion coefficients for samples with different size and nature (soils, rocks, concretes, synthetic materials, etc.). It is a non-destructive test that can be used to calculate the gas diffusion coefficients of more than one gas at the same time. It is looking for companies that are interested in this technology for its commercial exploitation.

VENTAJAS Y ASPECTOS INNOVADORES

The main advantages and the novelty of the presented device are:

- The device allows the calculation of the diffusion coefficient of a single o multiple gas components in a gas mixture, under different environmental conditions of humidity and temperature, reproducing real conditions. It determines the effect of the environmental parameters in the diffusion coefficient.
- The device works with samples with different size and composition.
- It is a non destructive test. The sample is not altered during the test.
- It is possible to test different gases simultaneously. For instance, water vapor (employed in the test to achieve the humidity required), and other gas as carbon dioxide (CO2), ozone (O3), methane (CH4), etc.
- It allows testing samples which cannot be tested in situ.
- The device works in different modes: short and repetitive cycles, long cycles, etc.

APLICACIONES DE LA OFERTA

This invention is appropriate to the field of Material Science. The device has been designed in order to determine gas diffusion coefficients in a wide range of environmental conditions and for multiple samples with different size and composition.

For instance:

- Soils.
- Rocks.
- Concretes.
- Synthetic materials.

The device would result useful in:

- Construction materials analysis.
- Geochemical gases prospection.
- Geochemical studies of the gaseous movement through soil and rocks.

COLABORACIÓN BUSCADA

It is looking for companies interested in this technology for its technological exploitation through:

- Licensing agreement of the patent.
- Hunt of funding opportunities to develop new applications, to adapt the device to some particular requirements, etc.
- Technology transfer agreement.
- Perform technical reports and scientific support to the companies.