Faster Characterization of Porous Materials ID# 2013-4094



TECHNOLOGY READINESS LEVEL

4-7

Seeking

Investment | Licensing | Research

Keywords

- gas seperation
- porous materials
- gas storage
- porosimetry
- gas adsorption

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Improved gravimetric setup

Technology Summary

A method is disclosed for characterizing a material's porous nature faster than current porosimetry techniques. Gas uptake is measured by dosing a certain amount of gas into the sample holder. The adsorption system is kept under isothermal condition for a certain amount of time. Then, the current gas uptake is chosen as the target uptake and a unique pressure control algorithm is used to damp gas uptake changes as fast as possible.

Application & Market Utility

Porous materials are used in catalysis, gas separation, gas storage, and environmental protection such as CO2 and NH3 adsorption.

The proposed technique can be applied to any in use instruments through the use of simple modifications. Gravimetric instruments require only that a simple change in control program software. Volumetric systems require a piston-cylinder compartment be added.

Next Steps

Patent 9,274,040 issued 3/11/2014. Seeking licensing opportunities.



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