



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 CO<sub>2</sub> and NH<sub>3</sub> 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.

### TECHNOLOGY READINESS LEVEL

4-7

#### Seeking

Investment | Licensing | Research

#### Keywords

- gas separation
- porous materials
- gas storage
- porosimetry
- gas adsorption

#### Researchers

##### Ramakrishnan Rajagopalan

Assistant Professor of Engineering  
[Online Bio](#)

##### Henry C Foley

Former Vice President for Research

##### Ali Qajar

Graduate Student  
**Originating College**  
College of Engineering

#### Office of Technology Management Contact

Swope, Bradley  
bas101@psu.edu  
814-863-5987