



## This Week at NETL

October 15, 2013

### Sorbent Patent Issued for Commercialization of BIAS Process

On September 10, 2013, NETL received U.S. patent number 8,530,375 for [Regenerable Solid Imine Sorbents](#), which offers two new classes of amine-based sorbents for testing in the commercialization of NETL's [Basic Immobilized Amine Sorbent \(BIAS\) Process](#) for CO<sub>2</sub> capture. The BIAS Process, winner of both an R&D 100 Award and a Federal Laboratory Consortium award for Excellence in Technology Transfer, uses regenerable solid sorbents to capture CO<sub>2</sub> from fossil fuel-burning power plants for permanent storage in a carbon sequestration scenario. The sorbents selectively react with CO<sub>2</sub> to extract it from the flue gas and are then heated to release the CO<sub>2</sub> for storage, thereby regenerating the sorbent for reuse.

### NETL-Regional University Alliance Team Contributes to Reviews in Mineralogy and Geochemistry

A team of researchers from [NETL's Regional University Alliance \(NETL-RUA\)](#) has been asked to contribute to a short course entitled [Geochemistry of Geologic CO<sub>2</sub> Sequestration](#) that is being offered in conjunction with the [American Geophysical Union Fall Meeting](#) to be held in San Francisco in December 2013. The 2-day short course will provide an authoritative summary of the fundamental geochemical and mineralogical processes associated with gas-water-mineral-interactions encountered during geological sequestration of CO<sub>2</sub>. The NETL-RUA team will focus on available experimental PVTX (pressure-volume-temperature-composition) data for the system H<sub>2</sub>O-CO<sub>2</sub>-“salt”-“mineral” as well as equations of state that have been developed to predict PVTX properties at conditions relevant to carbon capture and storage in geological formations. The team will also evaluate various storage mechanisms in terms of the storage volumes required and provide assessments of the volume of brine or aquifer required to accommodate current and projected CO<sub>2</sub> emissions. Proceedings of the short course will appear as a future volume of [Reviews in Mineralogy and Geochemistry](#), a series of review journals published jointly by the [Mineralogical Society of America](#) and the [Geochemical Society](#), with the NETL-RUA team's presentation composing a chapter of the proceedings.

### NETL Study Praised in Peer-Review Process

An NETL study comparing CO<sub>2</sub> storage methods for saline formations, published in the October 2013 issue of [International Journal of Greenhouse Gas Control](#), received praise from peer reviewers, who stated that “NETL's study makes an interesting and significant contribution to the hotly contested capacity assessment wars” and “the results should provide comfort to policymakers that capacity methodology debate is not where major uncertainty in moving forward on [carbon capture, utilization, and storage] lies.” NETL researchers compared CO<sub>2</sub> storage estimates by applying several commonly used methods to general saline formation datasets and then assessing the impact that the choice of method had on the results. A statistical analysis of the estimates generated by multiple methods revealed that assessments of CO<sub>2</sub> storage potential made at the prospective level were often statistically indistinguishable from each other, implying that the differences in methodologies are small compared to the uncertainties in the geologic properties of storage rock in the absence of detailed, site-specific characterization.

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#### For more information, please contact:

Shelley Martin, DOE National Energy Technology Laboratory, 304-285-0228, [newsinfo@netl.doe.gov](mailto:newsinfo@netl.doe.gov)