Geochemistry Division Symposia
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Multiscale Spatiotemporal Complexity in Geologic Carbon Sequestration: Linking Experimentation and Modeling

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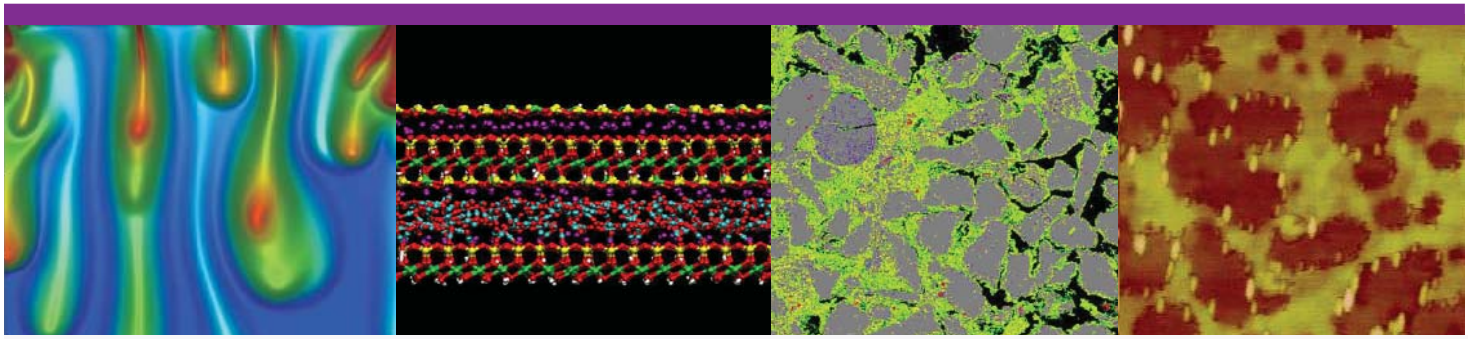

CO_2 fluids	*CO_2 in mica layer*	*Shaley sandstone*	*Amorphous silica on clay*
Physics Today 2008	*Philos. Mag. 2010*	*Chem. Geology 2009*	*ES&T 2010*

Mitigation of climate change requires immediate actions to reduce anthropogenic CO_2 emissions and lessen future adverse effects. Geologic carbon sequestration is a promising option that requires a better understanding of the geochemical, geophysical, and biological processes at potential field sites. We need better multiscale information to develop and deploy technologies that couple chemical reactions, geophysical alterations, and transport phenomena. For example, dissolution of rocks and secondary mineral formation induced by CO_2 injection can potentially change the physical properties of the geologic formations, and thus can influence the transport and prolonged injection of CO_2. Current research is generating new information that is essential to designing more sustainable CO_2 storage strategies, predicting their performance, and assessing potential risks.

This symposium welcomes papers for oral and poster presentations that describe multiscale and multidisciplinary advances in our understanding of more sustainable geologic CO_2 sequestration. Topics of interest include, but are not limited to,

- Laboratory investigations of sequestration processes
- Field-scale characterization and assessment of sequestration systems
- Modeling of reactions and transport at multiscales
- Coupled geochemical, geophysical, and biological effects during CO_2 storage
- Scaling up scientific findings at laboratory scale to field scale and from short to longer time scales
- Environmental risk management of geologic carbon sequestration, including the monitoring, identifying, and remediating of leaks from formations
- Assessing the integrity of caprocks and well seals
- Environmental impacts of the geologic CO_2 sequestration

Confirmed invited speakers are Sally Benson (Stanford Univ.), Michael Celia (Princeton Univ.), James W. Johnson (Schlumberger), Yousif Kharaka (USGS), John Kuszuba (Univ. Wyoming), and Carl Steefel (LBNL)