The salinity and water extent influence the interaction of CO_2-brine-clay mineral

Young-Shin Jun
EFRC: Nanoscale Control of Geologic CO_2

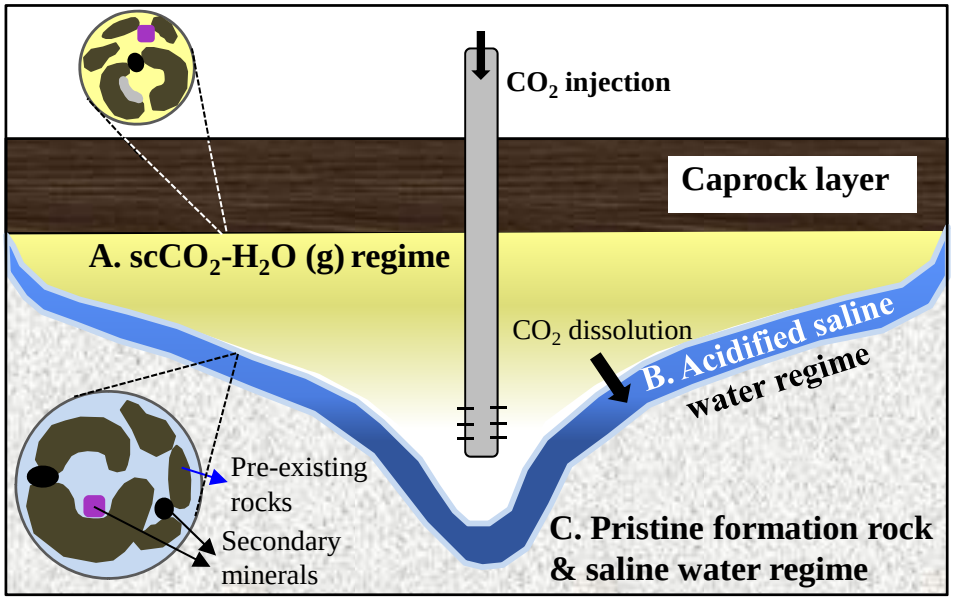

Figure 1. Schematic diagram of potential CO_2-saline water-rock interactions in GCS sites.

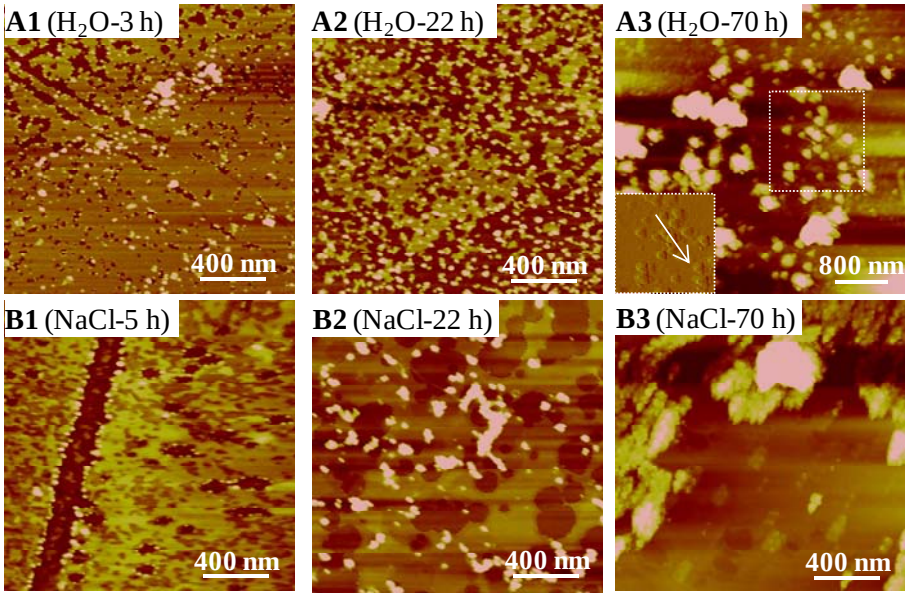

Figure 3. Formation of secondary mineral phases on the phlogopite surface after reaction in water and in 1 M NaCl at different times under 102 atm of CO_2 and 368 K.

- The salinity of brine affects the size, shape, position and phase of the secondary minerals.
- Precipitation is more abundant in low salinity solution.
- When phlogopite is in contact with supercritical CO_2 saturated with water vapor, a surface coating of secondary mineral can be formed.

Environ. Sci. Technol. **2011**, *45,* (4), 1737–1743.