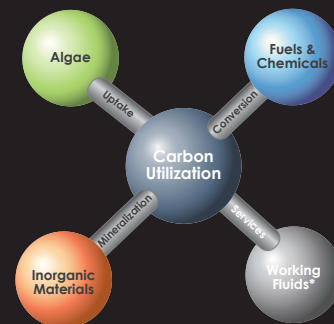


Carbon Utilization (CU) via Mineralization into Inorganic Materials

Developing mineralization technologies that utilize waste CO₂ to produce products such as carbonate cements, precast concrete, aggregates, bicarbonates and nanomaterials for use in the built environment



R&D ACTIVITIES

The program supports various innovative processes utilizing CO₂ to produce and enhance inorganic materials. The current portfolio includes approaches to produce precipitated calcium carbonate, precast concrete products, multi-functional concrete, and construction materials.

CHALLENGES

- Controlling and accelerating carbonate reactions
- Optimizing process design
- Characterization and acceptance of new material formulations
- Scaling and product transportation

ACCOMPLISHMENTS

- ✓ “Upcycled” concrete produced using minimal external energy, decreasing operating costs
- ✓ Carbon negative carbonated mortars produced with higher compression strength than current state-of-the-art mortars
- ✓ Development of an integrated “bolt-on” technology that is maximizing CO₂ uptake

