

Advanced Materials Research Group project summary

Project Title	Mineralogy and geochemistry of ultramafic rocks and serpentinites for mineral CO ₂ sequestration
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Project Summary	<p>The most widely known and mature technology for carbon abatement is carbon capture and storage of CO₂ in porous rock. In appropriate locations, this is likely to be the most useable technology in the immediate future. However, its use will be restricted in areas with no porous rocks, such as shield areas. It is, however, also possible to permanently sequester CO₂ by turning it into a mineral using Mg-rich rocks (ultramafic rocks and serpentinites) as a feedstock. This process is commonly referred to as Carbon Capture and Storage by Mineralisation (CCSM).</p> <p>This research will investigate whether the efficiency of CO₂ mineralisation of Mg-silicate rocks is controlled by measurable and quantifiable mineralogical/structural and/or geochemical factors.</p> <p><i>Caption: Scanning electron microscope image of platy hydromagnesite crystals formed by the interaction of atmospheric CO₂ and serpentine rocks. This is a natural analogue of CCSM, a process that is currently studied worldwide as means of mitigating the increased levels of CO₂ in the atmosphere. (Montecastelli, Italy)</i></p>

