

Rapid conversion of olivine into carbon storing minerals

**RONI GRAYEVSKY¹, AMIT G. REISS¹ AND SIMON
EMMANUEL²**

¹Hebrew University of Jerusalem

²The Hebrew University of Jerusalem

Presenting Author: roni.grayevsky@mail.huji.ac.il

Mineralization is often proposed as a method to store carbon, and typically involves reacting CO₂ directly with silicate minerals, such as olivine, to form carbonate minerals. However, this reaction is extremely slow under standard conditions, so that sequestering significant amounts of carbon could take years or decades. Here, we demonstrate the feasibility of using a reaction between carbon-rich fluids and olivine, to create stable mineral phases. We performed a series of batch experiments on olivine grain sizes to quantify the rate and efficiency of the reaction. Our results demonstrate that high levels of conversion of olivine to carbon-bearing minerals can be achieved within days.