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Feasibility and Life Cycle Studies of Dolomites for Carbon Capture[1] MC BEN JOE CHARLES, DOMINIC DODSON, SHIRLEY GARCIA, SCOTT WALLEN, Florida Polytechnic University, GARY ALBARELLI, BRIAN BIRKY, Florida Industrial and Phosphate Research Institute, FL Polytech University, SESHA SRINIVASAN, Florida Polytechnic University — Dolomites ($CaMg(CO_3)_2$) are the minerals present in large quantities and are currently not used by the phosphate mining industry in Florida. This project seeks to utilize Dolomites as a medium for carbon capture. Thermogravimetric (TG) measurement of high concentration dolomite phosphatic pebbles received from our collaborating partners from Florida Industrial and Phosphate Research Institute (FIPR) were examined under Nitrogen (N_2) ambient environment between 300C to 800C. The structure and chemical composition of each sample were investigated using X-Ray Fluorescence (XRF), Fourier Transform Infrared Spectroscopy (FTIR) and X-Ray Diffraction (XRD). TG data shows that the amount of CO_2 lost on the first initial decomposition can't be gained; however, the amount of CO_2 that the samples gain and loss stabilize as more cycles are performed. We will describe and discuss the life cycle analysis of both commercial and handpicked dolomite samples for carbon capture applications.

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