

Accelerated Carbon Mineralisation: Bridging Fundamental Mechanisms with Scalable Climate Solutions

Abstract

With global CO₂ emissions exceeding 40 Gt annually, reducing the carbon footprint of cement and concrete is critical. This sharing will focus on underlying mechanics of accelerated carbon mineralization (ACM). How ACM derived products can convert CO₂ into useful solid materials for construction. The focus is on using these mineralised products as alternative binders and partial replacements for cement. This approach also enables the use of industrial waste while lowering overall cement consumption. Overall, carbon mineralisation offers a practical pathway to produce lower-carbon concrete while permanently storing CO₂.