



Thermodynamic modeling applied to studying cement hydration

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Concrete is the second most widely used substance on Earth only after water, while its main component, Portland cement, produces a considerable amount of CO₂. This has led to introducing alternative cementitious materials with a lower CO₂ footprint to be used in place of Portland cement. Due to the wide variety and complexity of the available candidate materials, it is often challenging to have complete understanding of how our designed concrete will behave over time. This talk begins with introducing the basic concept of thermodynamic modeling and how it has been applied to studying hydration of cements. Recent studies that investigated hydration phase assemblages of cements blended with supplementary cementitious materials and their durability performance are revisited.