Studies on Response of Structural Concrete Exposed to Extreme Temperature

- High Temperature (up to 1000 degree Celsius) - Degradation & aggregate melts
- Low Temperature – Freeze thaw studies
- Normal Temperatures & Relative Humidity (RH) – creep & shrinkage in concrete, relaxation in steel

Stress-Strain response of Concrete cylinders subject to different temperatures and exposure times, cooled and subsequently loaded in monotonic uni-axial compression after cooling

Hot-chamber (up to 1000 Celsius) integrated with servo-hydraulic UTM for applying combinations of load and temperature

Petro-graphic analysis: Thin section SEM efflorescent images highlighting glassy materials in fissures within the granite aggregate, indicating aggregate melt reached at temperatures > 850 degree Celsius for granite aggregate

Shrinkage & creep studies in walk-in Humidity (RH) and Temperature controlled room