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Improving infrastructure sustainability using nanoparticle engineered cementitious composites -- Influence of pumping on the fresh properties of self-compacting concrete -- Durability mechanics of advanced cement-based materials -- Aspects of durability of strain hardening cement-based composites under imposed strain -- Driving infrastructure sustainability with Strain Hardening Cementitious Composites (SHCC) -- Modelling the influence of cracking on chloride ingress into Strain-Hardening Cement-based Composites (SHCC) --Physical and mechanical properties of Strain-Hardening Cement-based Composites (SHCC) after exposure to elevated temperatures --Determining the durability of SCC using the South African early-age Durability Index tests -- Characterisation of crack distribution of Strain-Hardening Cement Composites (SHCC) under imposed strain --Shrinkage of highly flowable cement paste reinforced with glass fiber -- Early age cracking and capillary pressure controlled concrete curing -- Computational modelling of advanced cement-based materials --Finite element fracture analysis of reinforced SHCC members --Derivation of a multi-scale model for Strain-Hardening Cement-based Composites (SHCC) under monotonic and cyclic tensile loading -- Twoscale modeling of transport processes in heterogeneous materials --Computational modelling of Strain-Hardening Cement Composites (SHCC) -- Numerical modelling of strain hardening fibre-reinforced composites -- Some pertinent observation on the behaviour of high performance concrete-steel plate interface -- Specifications, design guidelines and standards -- Enabling the effective use of High Performance Fibre Reinforced Concrete in infrastructure -- Towards a reliability based development program for SHCC design procedures --A model for building a design tool for ductile fibre reinforced materials. Author index -- Back cover.