

# ADVANCED CONSTRUCTION MATERIALS TECHNOLOGY FOR SMART SUBMERGED FLOATING TUNNEL SYSTEMS

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## Abstract

Much of research endeavor and interest have been paid for expanding mankind territory into oceanic space. In the response of this, 'Smart Submerged Floating Tunnel Systems Research Center' was established in 2017 at Korea Advanced Institute of Science and Technology to promote development of core technologies needed for realization and construction of submerged floating tunnels. This talk will briefly outline the research goals of the center, which are directed at developing advanced construction materials for enduring harsh conditions provided in the oceanic environments. In particular, studies conducted with regard to developing (1) self-healing concrete for self-repair of cracks in reinforced concrete structures, (2) multiscale modelling framework for predicting mechanical properties and durability performance of cementitious materials, (3) alkali-activated cement for high resistance against chloride ingress, and (4) aluminosilicate binder for high thermal resistance will be presented.

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