**Additive manufacturing technology and its implementation in construction as an eco-innovative solution**

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**ABSTRACT**

Additive manufacturing (AM) of construction materials has been one of the emerging advanced technologies that aim to minimize the supply chain in the construction industry through autonomous production of building components directly from digital models without human intervention and complicated formworks. It was found that additive manufacturing represents different innovations in different settings, while it represents incremental innovation in one industry; it has led to radical changes in other industries.  However, technical challenges needs to be addressed for the industrial implementation of AM, e.g. materials formulation standardization, and interfacial bonding quality between the deposited layers amongst others. AM as one of the most highlighted key enabling technologies has the potential to create disruptive solutions, the key for its successful implementation is multidisciplinary effort in synergy involving materials science, architecture/design, computation, and robotics. There are crucial links between the material design formulations and the printing system for the manufacturing of the complex 3D geometries. Understanding and optimizing the mix design for fresh theology of materials and sufficient adhesion/cohesion of interface can allow the incorporation of complexity in the geometry.

*Keywords: Additive manufacturing, construction industry, cement technology.*