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Application of nanotechnology in the building sector

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N anotechnology has been gaining popularity among the industrial sector and researchers in the last decades. The number of products containing nanomaterials that enter the market has also increased rapidly and this trend is going to be even more pronounced in the coming years (Roco 2011). The total value of nanotechnology products in the market is estimated to grow to 3000 \$bln in 2020. The reason for this favorable trend is the unique and interesting properties that nanoparticles exhibit. Nanotechnology has resulted in a variety of products and applications. Among the various industrial directions, the construction sector has observed significant progress in the past few decades. Because of the controlled dimensions in the transitional zone between atom and molecule, nanomaterials can contribute to the traditional building materials with extra functionalities. The novel properties introduced by nanomaterials can provide additional performances such as adjustable conductivity, improved mechanical properties and air purifying properties (Lee et al. 2009). This paper focus on the use of nanomaterials in the construction industry and it is structured in in four sections: special properties of the nanomaterials, nanotechnology for sustainable construction, health and environmental risks and future trends.

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