



Secondary raw materials in line to the circular economy concept for supporting smart specialization strategy

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Smart specialization strategy (S3) presents a modern approach to economic development based on knowledge, research and innovation, thus connecting science and business. Sustainable Development Goals (SDGs) and EU Green Deal present the main pillars of S3. According to the EU Green Deal, there are need, more than any time before, to apply the circular economy concept and the principles for resource efficiency in construction in order to reduce the use of natural resources and protect the environment in the future.

Construction sector has the significant impact on the climate change due to its responsibility for greenhouse gas emissions. Cement industry accounts for about 7% of the total global anthropogenic GHG emissions. Valorization of secondary raw materials in construction presents an approach, among others, to alleviate this problem. Different residues, wastes, and industrial by-products, including coal fly ash and bottom ash, metallurgical slags, red mud, mine, and quarry wastes can be use as secondary raw materials to decrease the CO₂ footprint and reduce their environmental impact.

Significant amounts of secondary raw materials have been use in range of applications, such as: in cement clinker, green cements, as pozzolanic addition in cement, concrete, light weight aggregate, bricks, glass-ceramics as well as for advanced applications as aerogels and geopolymers,.

Innovative solutions in construction in terms of valorizing different secondary raw materials for the synthesis of green cements, geopolymers as well as self-healing of mortars, in line to the concept of circular economy supporting the Smart specialization strategy in our country will be present.

Keywords: secondary raw materials, circular economy concept, smart specialization strategy, construction, resources