DEVELOPMENTS IN CONCRETE TECHNOLOGY FOR SUSTAINABLE CONSTRUCTION

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Abstract: Modern concrete is a complex material, consisting of a family of component materials. Continuing research efforts had resulted in developing concrete mixes with tailored properties is used for varying applications under numerous service conditions. The success of concrete as the most widely used infrastructure construction material is due to its versatility, adoptability, formability and economy. However, sustainability of concrete construction industry is of concern, considering: use of natural materials, energy and manpower, emission of carbon dioxide; and durability failure of several concrete structures. This presentation discusses the developments in concrete technology, environmental impacts of concrete production and usage and addresses the approaches based on sound concrete research to minimize the environmental impacts. Utilization of waste materials and by-products from other industries are necessary in the production of concrete mixes for sustainable construction and to benefit the environment. The developments in the use of recycled concrete aggregates in high-performance of structural concrete and pervious concrete are also discussed.

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