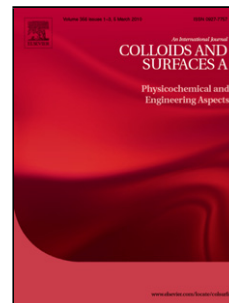


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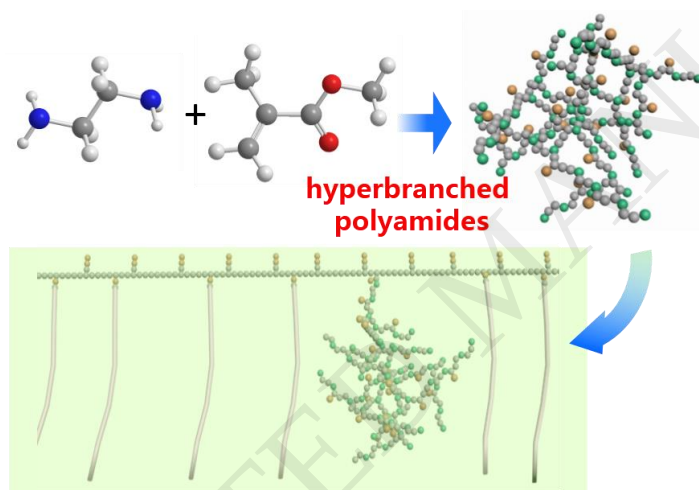
Comb-typed polycarboxylate superplasticizer equipped with hyperbranched polyamide teeth

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Graphical Abstract



The novel designed comb-type polycarboxylate with hyperbranched polyamide teeth shows significantly enhanced early strength of the concrete

Abstract:

The design of comb-typed polycarboxylate superplasticizer has been proved as an efficient water reducing agent to improve the concrete's workability. However, the reliability of such an architecture is still challenged due to delay of cement hydration and the resulting weak early-age compressive strength of the concrete. Building on this, we report the discovery of a novel comb-type polycarboxylate with hyperbranched polyamide in the side chains. Compared to the original polycarboxylate, the designed "poly(amide-ester)" one shows significantly enhanced early strength of the concrete

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