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Characterisation of basalt in polymer composite-an ecofriendly fiber filler with promising dental application

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Abstract

This article explore the novel characterization and behaviour of natural mineral basalt fiber. Basalt fibers are synthesized from volcanic basalt rock which exhibits excellent mechanical, thermal, wear properties with nontoxic nature (Kogen et al). Due to very high mechanical strength, basalt fiber is used in structural application and also in orthopaedic polymer implants as reinforcements. The thermal stability of basalt is excellent which extends its use in high temperature applications. The wear behaviour of basalt fiber is the benchmark of its characterization and it is proved to be the best natural fiber reinforcement material for dental applications. This article extensively explores the history, chemistry, properties and applications of basalt fiber which proves as a promising reinforcement material in composites.

Keywords: Basalt fiber Composites Dental splints Removable denture bases Ecofriendly fiber

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