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Short communication

Matrixless fibrous oxide composites

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ABSTRACT

Modern composite materials are normally composed of at least two components. The fibres in ceramic matrix composites are often coated with a "weak" material that is the interphase arresting a macrocrack and providing the composite with fracture toughness. In many biological materials of a ceramic type an organic weak material of a tiny quantity plays actually two roles those being the matrix and interphase. Oxide fibres produced by the internal crystallization method have two plane and two concave surfaces. It is shown in the present work that the composite microstructure composed only of sapphire fibres contacting one another by plane surfaces is characterized by the non-brittle behaviour.

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