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# Numerical modeling of crack growth in interpenetrating metal-ceramic composites

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A 3D FEM model for crack growth in bi-continuous metal-ceramic composites with interpenetrating microstructure (IPC) is proposed. The results for the load-displacements relationship in a plastically deformable reinforcing fibre computed by means of different material models will be shown. The *J*-integral and fracture toughness will be determined for a simplified IPC microstructure with reinforcing ligaments modeled as axisymmetric fibres, and for real IPC microstructure obtained from micro-CT images.

Keywords: interpenetrating phase composites, bi-continuous composites, metal-ceramic composites, crack bridging, crack growth, fracture toughness, finite element method