

عنوان مقاله:

TOPOLOGY OPTIMIZATION OF COMPOSITE MATERIALS WITH OPTIMAL STIFFNESS AND THERMAL CONDUCTIVITY

محل انتشار:

مجله بهینه سازی در مهندسی عمران، دوره 1، شماره 3 (سال: 1390)

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خلاصه مقاله:

This paper presents the bidirectional evolutionary structural optimization (BESO) method for the design of two-phase composite materials with optimal properties of stiffness and thermal conductivity. The composite material is modelled by microstructures in a periodical base cell (PBC). The homogenization method is used to derive the effective bulk modulus and thermal conductivity. BESO procedures are presented to optimize the two individual properties and their various combinations. Three numerical examples are studied. The results agree well with those of the benchmark microstructures and the Hashin-Shtrikman (HS) bounds.

کلمات کلیدی:

(Topology optimization; composite; homogenization; evolutionary structural method (ESO)

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1831379>

