عنوان مقاله:

Forced vibration of sandwich beam embedded with SMA wires: higher-order approach

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نویسندگان:

M Samadpour - *Mechanical Engineering Department, Amirkabir University of Technology*

M Sadighi - *Mechanical Engineering Department, Amirkabir University of Technology*

M Shakeri - *Mechanical Engineering Department, Amirkabir University of Technology*

خلاصه مقاله:

In this article, Forced vibration of sandwich beam embedded with shape memory alloy (SMA) wires in the orthotropic face sheets is investigated. The one-dimension constitutive equation of SMA proposed by Brinson is employed. Higher order sandwich panel theory (HSAPT) is applied for the orthotropic face sheets and elastic flexible core respectively. According to the Hamilton principle, equations of motion are derived and proportions of the mechanical and pseudoelastic stresses on potential energy are investigated separately. By implementing Finite Element method, forced vibration of sandwich beam with SMA hybrid composite face sheet is studied. Due to this approach, SMA have been damped dynamic response in contract to, the case without SMA wires in facesheet. In this paper effect of pre-strain and temperature on forced vibration of sandwich beam are analyzed.

کلمات کلیدی:
sandwich beam, SMA, high-order, forced vibration

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