عنوان مقاله:

Hygro-Thermal Nonlinear Analysis of a Functionally Graded Beam

محل انتشار:

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خلاصه مقاله:

Nonlinear behavior of a functionally graded cantilever beam is analyzed under non-uniform hygro-thermal effect. To solve this problem, finite element method is applied within plane solid continua. Total Lagrangian approach is utilized in the nonlinear kinematic relations. Newton-Raphson method with incremental displacement is used in nonlinear solution. Comparison study is performed. Effects of material distribution, temperature and moisture changes on nonlinear deflections of the functionally graded beam are presented and discussed.

کلمات کلیدی:

Functionally Graded Beam, Hygro-Thermal Loading, Nonlinear Analysis, Total Lagrangian Finite Element Method