

عنوان مقاله:

Analysis of Crack Growth in One-Layer Reinforced Plate with Aluminum Nano-particles Using Finite Element Method

محل انتشار:

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خلاصه مقاله:

After 1830, scientists realized that when materials are placed under cyclic and iterative loads failure at lower stress than yield limit. Structures failure under dynamical loads is called fatigue. Failure occurs because of very quickly Fatigue and without priorwarning and the fracture cross section in this manner is like a brittle failure without the least plastic deformation in it and on the macroscopic scale, the fracture surface is perpendicular along with main tensile stress. In this thesis, the way of the propagation of crack in a plate which is made of steel, aluminum and aluminum nanocomposite was investigated studied. To achieve this goal, the advanced XFEM method was used in Abacus software. Considering the results of this study, it was observed that in the manner that plate is made of steel, more force is needed for breaking and crack propagation, this force is more than the amount of necessary power for plates .with aluminum and aluminum nano composites

کلمات کلیدی:

Aluminum Nano-particles, Finite element method, Crack, Fatigue, Abacus

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