

## عنوان مقاله:

A Neural Network Model for Prediction of Delamination in Composite Materials

## محل انتشار:

سومین کنفرانس ملی و اولین کنفرانس بین المللی پژوهش هایی کاربردی در مهندسی برق، مکانیک و مکاترونیک (سال: 1394)

تعداد صفحات اصل مقاله: 8

## نویسندگان:

Zohreh Ebrahimi - Assistant Professr, Department of Mechanical Engineering, Payame Noor University, PO BOX  
۱۹۳۹۵-۳۶۹۷ Tehran, Iran

M. Bahrami Rahnama - MSc. Student, Department of Mechanical Engineering, Payame Noor University, PO BOX  
۱۹۳۹۵-۳۶۹۷ Tehran, Iran

.Hosein Ebrahimi - Department of Metallurgical Engineering, Sharif University of Technology, Tehran, Iran

## خلاصه مقاله:

We have developed an artificial neural network model (ANN) to investigate the crack propagation in composite materials. First, a finite element (FE) model is developed, to simulate the delamination in composite structures under mode I loading. The FE model is validated by comparing the load-displacement response with experimental results. A series of mode I simulations are performed, where the crack initiation force is evaluated for different specimens. This data-base is used later to develop a multilayer neural network, which is capable of predicting the stress initiation force for arbitrary initial crack lengths and specimen thicknesses. The ANN results verify the good performance of this model.

## کلمات کلیدی:

Delamination, Composite materials, Neural network, Finite element model

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/478884>

