

## عنوان مقاله:

Optimum design of FGX-CNT-reinforced Reddy pipes conveying fluid subjected to moving load

## محل انتشار:

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## خلاصه مقاله:

The harmony search algorithm is applied to optimum designs of a functionally graded (FG)-carbon nanotubes (CNTs)-reinforced pipes conveying fluid subjected to moving load. The structure is modeled by Reddy cylindrical shell theory and the motion equations are derived by Hamilton's principal. Based on differential quadrature method (DQM), the dynamic displacement of system is derived. The length, thickness, diameter, velocity of load and acceleration of load, temperature of fluid, velocity of fluid, and the volume fraction of CNT are considered for design variables. The results illustrate that the optimum diameter of the pipe is decreased by increasing the CNTs volume percent. In addition, with increasing the moving load velocity and acceleration, the FS is decreased.

## کلمات کلیدی:

Optimization, Pipe, Moving load, Conveying fluid, DQM

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/589206>

