

## عنوان مقاله:

Transient Response of a Double-Walled Cylindrical Structure Made of Functionally Graded Materials Filled Between Walls and Submerged in Fluid

## محل انتشار:

دومین کنفرانس بین المللی کامپوزیت (سال: 1389)

تعداد صفحات اصل مقاله: 6

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## خلاصه مقاله:

The dynamic solution of a Double-Walled Cylindrical Structure Made of Functionally Graded Materials in the state of axisymmetric plane strain is obtained. The material properties of two cylinders are assumed to vary continuously with the change of volume concentrations of the constituting materials (ZrO<sub>2</sub> to Al) across the thickness of the two cylinders. Each cylinder is approximated by a laminate model, for which the solution was applied the matrix transform solution technique. In this method, First, relevant field variables (i.e. stresses and displacements) for each layer of the multilayered cylinder as functions of unknown coefficients are written. By eliminating the unknown transmission coefficients, the local matrix transform of an individual layer is obtained. When this process is undergone for all layers one after another, the multiplication of all local transfer matrixes leads to a global transfer matrix which links the boundary conditions of inner and outer surfaces of the two multilayered shells. Three types of FGM spherical shells composed of Al and ZrO<sub>2</sub> are considered. Between two cylinder filled by water and axisymmetric load is applied in inner surface of internal cylinder.

## کلمات کلیدی:

Transient Response; functionally graded materials; Submerged; transmission matrix; Double-Walled Cylindrical

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/102791>

