

The free vibration analysis of rotating multi-layered cylindrical shell is investigated based on the first order shear deformation theory (FSDT) of shell. Cylindrical shell consists of three layers; outer and inner layers are isotropic material and the middle layer is a functionally graded material (FGM). The material properties for middle layer are assumed to be graded in the thickness direction. Based on Hamilton's principle, the equilibrium equations and the equations of motion are derived and then solved by using the differential quadrature method (DQM) as a numerical tool. MATLAB software was adopted for programming the equations and the related boundary condition. The effect of (FGM) layer thickness, angular speed, index power law, circumferential wave number on the natural frequency of the clamped-clamped rotating cylindrical shell were examined. The numerical results showed that a reasonable agreement between the present study and analytical data available in the literature.