UNSTEADY PERISTALTIC TRANSPORT OF INTEGRAL AND NON-INTEGRAL NUMBER OF VISCOUS FLUID BOLUS THROUGH CHANNEL

DHARMENDRA TRIPATHI

Abstract

This investigation deals with the temporal effects on peristaltic flow of viscous fluid in a channel of finite length under the assumption of large wavelength and small Reynolds number approximation. The expressions for axial velocity, transverse velocity, pressure gradient, volume flow rate and local wall shear stress are obtained. The effects integral and non-integral number of wave in a train on pressure distribution and local shear stress for free pumping are discussed. It is revealed that the peaks of pressure for the two different types of fluid boluses are identical in the integral case while the peaks are different in the non-integral case. The quantitative and qualitative similarities are found for local wall shear stress in both cases.

_____