

Documents

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Entropy production in peristaltic flow of a space dependent viscosity fluid in asymmetric channel

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Abstract

In this paper, Second-law analysis has been made for the peristaltic flow of a viscous variable viscosity fluid in an asymmetric channel. The entire study is carried out in a moving frame of reference. The exact solutions of the problem have been obtained by normalizing the governing equations. The main sources of entropy generation in the peristaltic flow have been investigated. Graphical illustrations of the total entropy generation number and the Bejan number have been provided and effects of pertinent parameters of interest are discussed. It is established that the entropy generation is minimum in the expanding region of the channel. Moreover, the entropy generation rises in the cooled region of the channel by increasing the variable viscosity parameter. © 2018 Society of Thermal Engineers of Serbia.

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