

**Computational study on application of nanoparticles as a drug carrier on the artery wall as stenosed treatment**

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The applications of nanoparticles as a drug carrier and its effects on the wall of stenosed arteries is presented. In this study, three nanoparticles i.e. Fe<sub>3</sub>O<sub>4</sub>, TiO<sub>2</sub>, and Cu have been used. It is observed that the addition of Fe<sub>3</sub>O<sub>4</sub> nanoparticle reduced the resistance impedance of the blood temperature through bell shape stenosed arteries as compared to TiO<sub>2</sub> and Cu nanoparticles. On entering in the stenosed area, blood temperature increases slightly, but, increases considerably and reaches its maximum value in the stenosis throat. It is obtained that, the axial temperature distribution has a considerable variation in magnitude when the periodic body acceleration and Prandtl number are stronger.

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