

Extreme pressure properties investigation of palm olein using four ball tribotester

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ABSTRACT

In this study, the numerical solution of stagnation point flow over a stretching surface, generated by Newtonian heating in which the heat transfer from the surface is proportional to the local surface temperature is considered. The transformed boundary layer equations are solved numerically using the Keller box method. Numerical solutions are obtained for the local heat transfer coefficient and the wall temperature. The features of the flow and heat transfer characteristics for various values of the Prandtl number, stretching parameter and conjugate parameter are analyzed and discussed.

KEYWORDS:

Newtonian heating; Numerical solution; Stagnation point flow; Stretching sheet

REFERENCES

1. Sakiadis, B.C. Boundary-layer behavior on continuous solid surfaces: I. Boundary-layer equations for two-dimensional and axisymmetric flow. (1961) *AIChE Journal*, 7 (1), pp. 26-28.
2. Tsou, F.K., Sparrow, E.M., Goldstein, R.J. Flow and heat transfer in the boundary layer on a continuous moving surface. (1967) *International Journal of Heat and Mass Transfer*, 10 (2), pp. 219-235.
3. Crane, L.J. Flow past a stretching plate. (1970) *Zeitschrift für angewandte Mathematik und Physik ZAMP*, 21 (4), pp. 645-647.
4. Ishak, A., Nazar, R., Pop, I. Post-stagnation-point boundary layer flow and mixed convection heat transfer over a vertical, linearly stretching sheet. (2008) *Archives of Mechanics*, 60 (4), pp. 303-322.
5. Ishak, A., Jafar, K., Nazar, R., Pop, I. MHD stagnation point flow towards a stretching sheet. (2009) *Physica A: Statistical Mechanics and its Applications*, 388 (17), pp. 3377-3383.