Scopus

Documents

Dogonchi, A.S., Chamkha, A.J., Hashemi-Tilehnoee, M., Seyyedi, S.M., Rizwan-Ul-Haq, Ganji, D.D.

Effects of homogeneous-heterogeneous reactions and thermal radiation on magneto-hydrodynamic Cu-water nanofluid flow over an expanding flat plate with non-uniform heat source [均相和非均相反应和热辐射对 **Cu-**水纳米流体在非均匀热源平板上磁流体力学的影响**]**
(2019) *Journal of Central South University*, 26 (5), pp. 1161-1171. Cited 3 times.

Abstract
This study presents the effect of non-uniform heat source on the magneto-hydrodynamic flow of nanofluid across an expanding plate with consideration of the homogeneous-heterogeneous reactions and thermal radiation effects. A nanofluid's dynamic viscosity and effective thermal conductivity are specified with Corcione correlation. According to this correlation, the thermal conductivity is carried out by the Brownian motion. Similarity transformations reduce the governing equations concerned with energy, momentum, and concentration of nanofluid and then numerically solved. The influences of the effective parameters, e.g., the internal heat source parameters, the volume fraction of nanofluid, the radiation parameter, the homogeneous reaction parameter, the magnetic parameter, the heterogeneous parameter and the Schmidt number are studied on the heat and flow transfer features. Further, regarding the effective parameters of the present work, the correlation for the Nusselt number has been developed. The outcomes illustrate that with the raising of the heterogeneous parameter and the homogeneous reaction parameter, the concentration profile diminishes. In addition, the outcomes point to a reverse relationship between the Nusselt number and the internal heat source parameters. © 2019, Central South University Press and Springer-Verlag GmbH Germany, part of Springer Nature.

2-s2.0-85066507054
Document Type: Article
Publication Stage: Final
Source: Scopus