Entropy Generation On Mhd Viscoelastic Nanofluid Over A

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Entropy Generation On Mhd Viscoelastic
In this paper it is intended to analyse entropy generation by applying second law of thermodynamics to magnetohydrodynamic flow, heat and mass transfer of an electrically conducting viscoelastic liquid (Walters B ´) past on a stretching surface, taking into account the effects of Joule dissipation, viscous dissipation and Darcy dissipation, and internal heat generation. The boundary layer equations are solved analytically by using Kummer's function.

Entropy generation analysis for viscoelastic MHD flow over ...
In this paper it is intended to analyse entropy generation by applying second law of thermodynamics to magnetohydrodynamic flow, heat and mass transfer of an electrically conducting viscoelastic ...

(PDF) Entropy generation analysis for viscoelastic MHD ...
Entropy generation analysis of MHD Maxwell visco elasticity-based micropolar fluid flow past a stretching sheet through porous media with radiation and thermal slip has been investigated. Using suitable similarity transformations the coupled non-linear partial differential equations of motion and energy have been converted into a set of non-linear ordinary differential equations.

Entropy Generation Analysis of MHD Viscoelasticity-Based ...
Effect of the magnetic parameter on the entropy generation number. fixed value of η, the entropy generation number increases with the magnetic parameter, because the presence of the magnetic field creates more entropy in the fluid. Moreover, the stretching surface acts as a strong source of irreversibility.

Entropy Generation in Viscoelastic Fluid Over a Stretching ...
Entropy generation analysis for viscoelastic MHD flow over a stretching sheet embedded in a porous medium S. Baaga,*, S.R. Mishrab, G.C. Dashb, M.R. Acharyaa aDepartment of Physics, College of Basic Science and Humanities, O.U.A.T, Bhubaneswar 751003, Odisha, India

Entropy generation analysis for viscoelastic MHD flow over ...
The entropy generation has been computed considering Darcy dissipation besides viscous and Joule dissipation. Results for some special cases of the present analysis are in good agreement with the existing literature. Increase in viscoelastic and magnetic parameter reduces the velocity.

Entropy generation analysis for viscoelastic MHD flow over ...
Aiboud and Saouli [16] studied entropy generation in viscoelastic MHD flow over a stretching surface. Butt et al. [17] presented the effects of velocity slip on entropy generation in the boundary...

Entropy analysis for viscoelastic magnetohydrodynamic flow ...
Viscoelastic fluid, MHD, Non-uniform heat source/sink, Thermal radiation. fluid is of considerable interest in modern metallurgical and . 1. INTRODUCTION . Entropy generation is a measure of the account of irreversibility associated to the real processes. The entropy generation is encountered in many of energy related

Effect of Entropy Generation in Viscoelastic Fluid over a ...
This study examines the effects of viscous and porous dissipation on entropy generation in the viscoelastic fluid flow induced by a linearly stretching surface. Analysis of mass transfer is also performed. Consideration of rheological characteristics of viscoelastic fluid in the energy conservation law and entropy generation number in terms of viscous dissipation makes a striking difference in the energy equation and entropy generation number for Newtonian and viscoelastic fluid.

Entropy Generation Due to Heat and Mass Transfer in a Flow ...
The entropy generation number that is the dimensionless entropy generation rate becomes: (14) $N_S = S_{gen}''' \mu U_0^2 T_0 r_0^2 = \Omega Br \partial \theta \partial R 2 + \partial U \partial R 2 + M 2 U 2 = N H + N F + N M$ where N_H, N_F, and N_M on the right hand of the equation are the irreversibilities due to heat transfer, fluid friction, and magnetic field.

Entropy generation between two vertical cylinders in the ...
Entropy Generation On Mhd Viscoelastic Nanofluid Over A book access. Entropy Generation On Mhd Viscoelastic In this paper it is intended to analyse entropy generation by applying second law of thermodynamics to magnetohydrodynamic flow, heat and mass transfer of an electrically conducting viscoelastic liquid (Walters B ´) past on a stretching surface,

Entropy Generation On Mhd Viscoelastic Nanofluid Over A
Entropy Generation in Viscoelastic Fluid Over a Stretching Surface Saouli Salah and Aïboud Soraya University Kasdi Merbah, Ouargla, Algeria 1. Introduction Due to the increasing importance in processing industries and elsewhere when materials whose flow behavior cannot be characterized by Newtonian relationships, a new stage in

Entropy Generation in Viscoelastic Fluid Over a Stretching ...
Entropy generation in form of heat dissipation destroys useful energy which accounts for the underperformance and decrease in the thermodynamic efficiency. Entropy generation analysis of Hall current effect on MHD micropolar fluid flow with rotation effect | SpringerLink. Advertisement.

Entropy generation analysis of Hall current effect on MHD ...
The generation of entropy is mainly concerned with the irreversibility of thermodynamics. Entropy can be generated from different sources, such as viscous dissipation, mass diffusion, and finite temperature gradients in the transfer of heat. The generation of entropy in thermal engineering has been investigated by Bejan [86,87] from some new aspects. The work already available in the system vanishes due to the generation of entropy.

Processes | Free Full-Text | Viscoelastic MHD Nanofluid ...
Abstract: The boundary-layer equations for mass and heat energy transfer with entropy generation are analyzed for the two-dimensional viscoelastic second-grade nanofluid thin film flow in the presence of a uniform magnetic field (MHD) over a vertical stretching sheet. Different factors, such

Viscoelastic MHD Nanofluid Thin Film Flow over an Unsteady ...
numerically analyzed the entropy generation in nanofluid flow in presence of variable magnetic field, viscous dissipation and solar radiation. Govindaraju et al. [19] investigated the entropy generation in MHD flow of a nanofluid. Rashidi et al. [20] presented the influence of thermal radiation on entropy generation in MHD blood flow of a nanofluid.

Entropy Generation due to MHD Mixed Convection of ...

Entropy Generation in MHD Radiative Flow of CNTs Casson Nanofluid in Rotating Channels with Heat Source/Sink. We presented the applications of entropy generation for SWCNTs and MWCNTs based on kerosene oil for Casson nanofluid flow by rotating channels.

Entropy Generation in MHD Radiative Flow of CNTs Casson ...

Qing, M. M. Bhatti, M. A. Abbas, M. M. Rashidi, and M. S. Ali, "Entropy generation on MHD Casson Nanofluid flow over a porous stretching/shrinking surface," Entropy 18, 123 (2016). https://doi.org/10.3390/e18040123 They have used the numerical successive linearization method and found that the increase in permeability parameter and Hartmann, Brinkman, and Reynolds numbers results in an increase in volumetric entropy generation.

Entropy generation in MHD Maxwell nanofluid flow with ...

ENTROPY GENERATION FOR MHD HEAT AND MASS ... entropy generation and the Bejan number in the flow field. The effect of variable viscosity, Schmidt number, Hartman and Reynolds number on the velocity, ... viscoelastic fluid having a temperature-dependent viscosity over a continuously stretching sheet. Salem [11] has further studied the problem of ...

ENTROPY GENERATION FOR MHD HEAT AND MASS TRANSFER OVER A ...

According to , the local volumetric rate of entropy generation for a viscous incompressible conducting fluid in the presence of magnetic field and induced electric field is given as $E_G = \frac{k}{T_0^2}\left(\frac{\partial T}{\partial y}-\right) + \frac{\mu}{T_0}\left(\frac{\partial u}{\partial y}-\right)^2 + \frac{\sigma-(E_z + uB_0)}{T_0}$.