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Job Satisfaction of LIS Professionals in University Libraries of Orissa

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Abstract

A man is happy in the working environment if he is happy about his job. Employment is not only an important source of income but also a vital element of life. If satisfied, they will get the best quality in the best time and bring profits. The preferred staff is also more creative and innovative, and creates a breakthrough that allows the organization to grow and change positively over time and to change market conditions. Job satisfaction is the whole matrix of work factors that make a person like the job situation and wants to be his subject without worrying about starting his or her job. There are two terms "work" and "satisfaction" Work is an activity that individuals can use to redeem prizes. Satisfaction refers to the feelings that people feel about events, rewards, relationships, and the amount of work happiness. This Study describes briefly about the job satisfaction of library and information science professionals of university libraries of Odisha.

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Job Satisfaction among Library Professionals Working In University Libraries of Odisha: A Case Study

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Abstract

Job satisfaction of employees, in general, is considered to be significant when an organization wants to achieve user's satisfaction. Academic libraries are non-profit oriented service production systems. The digital technology orientation in academic libraries has thrown more challenges to the library professionals rather than to the users who at times outwit the library professionals. The social pressure from the users and online document pressure has put the library professionals in stress. The extent of job satisfaction may differ individually according to age, educational qualification, experience, and marital status. The results revealed by the study that responding to library professionals working in academic institutions in the Madurai district were found to have their job satisfaction at varying degrees.

KeyTerms: Job satisfaction, Library professionals, University librarians salary, Overall job satisfaction, Gender difference and job satisfaction.

Introduction

Employment is a professional act that is performed by a person in the prize of a reward, salary. Satisfaction refers to the feelings that people feel about the award, human relations, and the level of happiness in a person's work. Job satisfaction, according to Luck, "is a positive emotional feeling as a result of an appraisal of work or employment experience." In general, the emphasis on different definitions, job satisfaction is defined as a degree of consistency between the perceived nature of the work and the perceived advantages of the staff. In the same way it can be described how the work environment fulfills the needs and values of staff and personal reactions to the environment. Among various professions, that of the librarian is a noble profession. In the age of digital transactions, academic libraries are still passing through a hybrid stage retaining the conventional documents while handling online information too. Users are many a time better informed of their sources and can retrieve their information needs bypassing the librarian's assistance. Bringing the library users into the library network and rendering services in the form suitable to their taste and need have become a challenge to the community of library professionals. The conscience of the library professionals can have job satisfaction only when they are able to perform their duties and responsibilities to the satisfaction of the library users as well as the library authorities. How do they cope up with the library working environment, is the question? The study covers the job satisfaction of library professionals working in academic institutions. The study gives a wider coverage to librarians working in all academic libraries located within the geographical limits of the Madurai district of Tamil Nadu, a constituent state of India.

Objective

- To study and understand the state of job satisfaction among university library professionals in their working place.
- To determine the level of satisfaction of the respondents regarding their job.
- To access and evaluate the opportunities available to the university library professionals for their career growth and development.
- To recommend the measures for enhancing job satisfaction among the library professionals working in University libraries of Odisha.

Methodology

The method used for this study is survey method. A structured questionnaire has been designed to collect information. For surveys, a well defined questionnaire distributed to each of the library professionals for their views and to know the status of job satisfaction on library and

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Heat transfer on the cross flow of micropolar fluids over a thin needle moving in a parallel stream influenced by binary chemical reaction and Arrhenius activation energy

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Abstract. Emerging engineering and industrial needs made the prime concern of this article to investigate the thermal management on the cross flow of micropolar fluids over a thin needle moving in a parallel stream. The flow is subject to binary chemical reaction and Arrhenius activation energy. The mathematical model of the considered physical problem consists of coupled nonlinear partial differential equations: conservation of mass, momentum, energy, and concentration equation. The dimensionless transformed governing equations subject to the given boundary conditions have been solved directly by the Runge-Kutta Fehlberg fourth- fifth-order method followed by the shooting technique. Graphical results relative to the interaction effects of dynamic thermo-physical dimensionless parameters such as Richardson parameter, Dufour number, Soret number, Prandtl number, temperature ratio parameter, nondimensional activation energy, chemical reaction parameter and velocity ratio parameter controlling the flow, heat and mass transfer features are presented and analyzed. It can be seen, from the study, that the skin friction due to angular velocity reduces with increase in size of the needle and it upsurges due to the increase in material parameter. The obtained numerical results revealed that the augmented Richardson parameter is in favor of a greater heat transfer enhancement. The obtained results show a better agreement of this model with the previously published results.

1 Introduction

In view of the specific features of the final products depending mainly upon the rate of heat transfer, the flow and heat transfer mechanism through stretching surfaces find many peer-to-peer applications such as manufacturing of fiber-glass, enhancement in efficiency of paints and lubrication, plastic-molding, glass blowing, paper production, crystal growing, aerodynamic extrusion of polymer and rubber sheets and many others. Crane [1] was the pioneer who analyzed beautifully the flow over a linear stretching plate and obtained successfully the analytical solution for the Navier-Stokes equations. The work done by Crane [1] was given a new domain by Gupta and Gupta [2] by introducing the mass transfer effects on the stretching sheet. Later, the heat transfer characteristics of second grade fluid flow past a stretched surface were well discussed by Rahman *et al.* [3]. More recently, Manzur *et al.* [4] carried on a study regarding the heat transfer analysis on a mixed convection crossed flow past a stretching sheet.

Several industrial manufacturing processes involve non-Newtonian fluids such as paints, lubricants, polymeric suspensions, biological fluids, animal blood, colloidal solutions, liquid crystals with rigid molecules, which cannot be described by traditional Newtonian fluid behaviors. Therefore, to investigate the behavior of such fluids, researchers

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Impact of Second Order Slip and Non-uniform Suction on Non-linear Stagnation Point Flow of Alumina-water Nanofluid over Electromagnetic Sheet

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Keywords:
prescribed heat flux model, slip flow, permeable stretched sheet, HAM and GAM, porous medium

ABSTRACT

The purpose of the present article is to study the influence of second order slip and variable suction on non-linear stagnation point flow of Alumina-water nanofluid past an electromagnetic sheet embedded in a porous medium. A simulation model was established through hybrid Homotopy Analysis Method (HAM) and Genetic Algorithm Method (GAM). Through this it was found that favorable pressure gradient and modified Hartmann number yield accelerated fluid motion while porous matrix and first order slip result in decelerated flow over stationary/moving electromagnetic sheet. The finding of this research may serve as greater cooling agent due to more heat transfer rate from the electromagnetic sheet subject to favorable pressure gradient.

1. INTRODUCTION

In a spirit of broadening approach, the study of flow and heat transfer of nanofluids brings a lot of attention to numerous vibrant researchers because of its significant applications involving modern technology in diversified areas of need. The precious and inevitable applications of nanofluid flow and heat transfer include microchips cooling in computer processors, mirco-electromechanical systems (MEMS), obtaining fast transient aspect in heating systems, nuclear reactors, transportation, biomedicine, food and chemical industries, electronics/transformer/ vehicle cooling and developing the best quality lubricants and oils. Such credibility of nanofluids providing huge beneficiaries is only due to enhancement in its thermal conductivity. It is ironic that Choi [1] investigated experimentally and found that the addition of nanoparticles in the convectional heat transfer base fluids enhances the thermal conductivity of the resulting fluid. Later, many researchers [2-10] studied the heat transfer aspects associated with the flow of nanofluid subject to different processes.

It is pertinent to note that electromagnetic sheet induces Lorentz force of exponentially decaying nature [11]. It is parallel to the span wise aligned alternating electrodes [12]. Flow velocity along the Riga plate is up surged due to the development of Lorentz force [13]. Nayak et al. [14] declared the impact of homogenous–heterogeneous reactions on the flow and radiative heat transfer of nanofluid comprises carbon nanopowder as nanoparticles and NaCl as base fluid over a Riga plate. The studies on stagnation point flow invite attention on boundary layer along material handling conveyers, aerodynamic extension of plastic sheet and petroleum industries.

The reality is that the introduction of porous matrix creates a drag which restrains the flow. It has been widely accepted that porous medium due to its interconnected pores (voids) can be used as insulators and heat transfer promoters in different systems. Furthermore, suspended nanoparticles dispersed in nanofluid augment the effective thermal conductivity. For these reasons, use of both porous media and nanofluid can enhance the thermal efficiency of typical physical systems significantly. In view of such benefits, porous media finds important applications in oil extraction, electronic cooling systems, heat exchangers and more. Torabia et al. [15] discussed the entropy generation due to the flow of Al_2O_3-water nanofluid through isotropic porous media. It is significant in their study that heat flux is an increasing function of nanofluid volume fraction. Thermal stability analysis in a nanofluid flow was examined by Govender [16]. In his analysis he tremendously obtained the convection threshold for the porous layer. Further, Ahmed et al. [17] studied 3D MHD flow through two parallel porous plates where they revealed that an increase in magnetic field strength leads to decelerated flow and augmented wall shear stress.

In certain circumstances, for instance, micro-scale fluid dynamics, the flow behavior of fluids is usually associated with slip flow regime. Further, a partial slip takes place on a stationary and moving boundary. Invoking its important role in polymeric and electrochemical industries, many authors [18-19] have studied the boundary layer flow subject to partial slip condition. Akber et al. [18] observed in their investigation that increase in slip parameter undermines the fluid flow and provides an improvement in thermal boundary layer. Turkyilmazoglu [19] studied the slip flow of MHD viscoelastic fluid wherein he found that for a fixed non-zero slip, magnetic field causes reduction in the heat transfer rate from the stretched sheet. Recently, Pandey and Kumar [20] investigated the impact of natural convection and thermal radiation on nanofluid flow over a stretching cylinder embedded in a porous medium.

Application of fluid suction helps in adding reactants, cooling the surface, reducing the drag, preventing corrosion or scaling in fluid. Usually, fluid suction has been applied to

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Higher Order Chemical Reaction on MHD Nanofluid Flow with Slip Boundary Conditions: A Numerical Approach

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Keywords:
nanofluid, non-linear thermal radiation, chemical reaction, porous medium

ABSTRACT

The present paper analyzes the MHD flow of nanofluid past a permeable stretched surface. The effect of non-linear radiative heat transfer, higher order chemical reaction and slip boundary conditions are also incorporated to the flow phenomena to enhance the heat transfer rate in the nanofluid. A suitable self-similar transformation is employed to convert PDEs into non-linear ODEs. The resulting set of differential systems is solved numerically by fourth order Runge-Kutta method with shooting technique. The impact of thermo-physical quantities on the flow field is shown via graphs. The numerical results for skin friction coefficient, local Nusselt and Sherwood numbers are calculated and demonstrated via table. It is found that heat generation is favorable to enhance the rate of shear stress as well as rate of heat transfer, further absorption retards mass transfer rate significantly. Also, the thickness of species distribution increases as the order of the chemical reaction n increases.

1. INTRODUCTION

A nanoparticle is a microscopic particle of diameter less than 100nm. The nanoparticles are made up metals, carbides, oxides or carbon nanotubes. By adding nanoparticles in the convectional fluids like ethylene glycol, water and engine oil, nanofluids are formed to enhance the heat transfer phenomena of the base fluids. There are several applications of nanofluids in the diverse field of engineering such as heat exchanger, refrigerator freezers, coolants, solar receiver, radiators etc. The pioneer experimental work on nanofluid is obtained Choi [1]. In his work, he takes water as a base fluid which enhances the heat transfer properties of the fluid. Further, development of model by incorporating Brownian motion and thermophoresis in the boundary layer flow of nanofluid was studied by Buongiorno [2].

The heat transfer radiation has many applications in the various fields such as design of engines and combustion chambers to operate at increased temperature to raise thermal efficiency, solar energy, semiconductor wafer processing, manufacturing of translucent crystals, energy transfer in furnaces etc. Akbar et al. [3] have studied the effects of the thermal radiation on nanofluid flow towards a stretching sheet with convective boundary condition. Second order slip MHD flow with the effects of radiation and chemical reaction has been studied by Zhu et al. [4]. Ibrahim [5] and Reddy [6] have considered the MHD nanofluid flow past a stretched surface with convective boundary condition and thermal radiation. Mabood et al. [7] projected their aim on Williamson nanofluid flow in presence of thermal radiation. Elbashbeshy et al. [8], Babu and Sandeep [9], Rahman and Eltayeb [10] and Mustafa et al. [11] studied numerically the results of nonlinear radiation mechanism for heat transfer of nanofluid past a vertical plate. Motsumi and Makinde [12] also extended their work by incorporating viscous dissipation and thermal radiation.

The application of heat and mass transfer is an important aspect now a day in industries such as the application of wet cooling water, drying, curing of plastics, food processing etc. Heat is generated when chemical reaction takes place between nanoparticles and base fluids. At that time the behavior of nanoparticles is observed which depending upon the sign of the chemical reaction. The rate of chemical reaction is controlled by the concentration of the species. Kandasamy and Devi [13] and Mahantesh et al. [14] have investigated the mixed convective nanofluid flow past a vertical plate with chemical reaction. Palani et al. [15] discussed unsteady nanofluid flow phenomena in presence of chemical of higher order.

The aim of the present study is to investigate the boundary layer flow of MHD nanofluid over stretching sheet under the influence of non-linear thermal radiation and higher order chemical reaction. Using similarity transformations, the governing PDEs are transferred into ODEs which were solved numerically by shooting technique. For the validation of the present result we have compared our result with that of earlier established result of Ibrahim [5] in a particular case.

2. PROBLEM FORMALISM

Electrically conducting boundary layer flow of nanofluid