5th Indian Conference on Applied Mechanics

(INCAM 2022)

November 11-13, 2022

Souvenir

Organized by:

Department of Mechanical Engineering
National Institute of Technology Jamshedpur
&
Indian Society for Applied mechanics (ISAM)

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Contents

INCAM_2022_paper_93

Prediction of Power Loss and Efficiency of Lathe Speed Gear box using Thermal Network Application

Ankit Kumar[1, a], Sanjoy Das[1, b], Akshay Munda[1, c], Subrata Samanta[2], Chandan Chattoraj[3]

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Abstract

Gearboxes are most important devices in machines and machineries. Power losses in gear contacts are transformed into heat which is distributed among the gearbox components increasing their temperature. A thermal model of the gearbox brings the opportunity of a deeper understanding of the heat dissipated related to the power losses in the gear contact. The present paper discusses thermal network application on lathe speed gearbox to predict and control power losses in geared systems and anticipate the consequences of design modifications prior to testing on actual drives.

INCAM_2022_paper_94

Enhancing Thermohydraulic Performance of Shell and Tube Heat Exchanger by using Nano fluid

Ankit Anjan

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Abstract

Heat exchangers play an important role in the field of energy conservation by extracting heat from the fluid at higher temperature and use this considerable amount of heat energy for heating the other heat input system. Heat transfer rate can either be increased by increasing area of heat transfer or by increasing the thermal conductivity of fluids or temperature difference between cold and hot fluids. Increasing the heat transfer area is not possible everywhere because of space restrictions. Increasing the temperature difference is also restricted, because upper limit doesn't cross the metallurgical condition and lower limit is atmospheric condition. Therefore, our attention is to increase thermo physical properties of cooling fluid. The need for better and efficient heat exchanging system is now required for energy conservation and new technological and industrial development for reducing adverse effect on environment. It is found experimentally that heat transfer rate enhanced by shell and tube heat exchanger by using TiO2 water Nanofluid (0.2% TiO2) and the thermal performance increases upto 9.5% as compared to the normal base fluid(water).

About INCAM

INCAM 2022 is the fifth in the series of INCAM conferences, continuing from previous successful editions INCAM 2013, INCAM 2015, INCAM 2017, INCAM 2019 held at IIT Madras, IIT Delhi, MNNIT Allahabad and IISc Bangalore respectively. INCAM 2022 is planned to organize by the departments of Mechanical Engineering, National Institute of Technology Jamshedpur. INCAM 2022 will provide a technical platform for discussion among researchers in the broad area of Applied Mechanics. The conference will feature plenary and invited lectures from experts, oral presentations, poster sessions, in offline mode.

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INCAM 2022 notification for paper 93

INCAM 2022 <incam2022@easychair.org> Mon, Oct 10, 2022 at 2:44 PM
To: Chandan Chattoraj <chandan.chattoraj@bcrec.ac.in>

Dear Author,

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We invite you to register for the conference INCAM 2022 through SBI Collect. For registration please follow steps given here https://www.incam2022.in/assets/SBI%20icollect%20for%20INCAM_2022.pdf

Please note that the abstract will be published during the conference as a souvenir. Full length conference articles need to be submitted after the conference for publication in Lecture Notes in Mechanical Engineering, Springer. Some of the conference articles will be recommended for possible publication in selected Scopus Indexed Journals.

Please do not hesitate to contact us for any query relevant to INCAM 2022.

With best wishes,
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5th Indian Conference on Applied Mechanics

(INCAM 2022)

November 11-13, 2022

CERTIFICATE OF ORAL PRESENTATION

This is certify that

Akshay Munda, Ankit Kumar, Sanjoy Das, Subrata Samanta, Chandan Chattoraj

has / have submitted a paper to the **5th Indian Conference on Applied Mechanics** jointly organized by the Department of Mechanical Engineering, National Institute of Technology Jamshedpur (India) and Indian Society for Applied Mechanics (ISAM) entitled

"Prediction of power Loss and Efficiency of Lathe Speed Gear Box using Thermal Network Application".

and is presented by Akshay Munda.

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Paper ID : INCAM/2022/093