Dr. Farooq Ahmad Najar

Ph.D (Mech), M.Tech(Mech), B.E(Mech), C.Eng, MTSI

Department of Mechanical Engineering
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Research Interests and Field of Specialization

Tribology: Hydrodynamic lubrication- Numerical studies based on Isothermal, Hydrodynamic (HD), thermohydrodynamic (THD), and Thermoelastohydrodynamic (TEHD) models. Hydrodynamic & Hydrostatic bearings- Horizontal, Vertical, Marine, Tilting Pad, and PTFE. Thrust Bearings are particularly used in large Hydro-power plants enabled with water cooling circuitry within the thrust element, Slide Shoe Bearings, Wind Turbine Tribology *etc*

Educational Background

May 2012 – Dec 2016 **Doctorates**, *National Institute of Technology, Srinagar*

Thesis: *An Investigation on a Large Hydrodynamic Thrust Bearing.*

Supervisor: Prof. G. A. Harmain

Oct 2008 – Dec 2010 **Masters of Technology**, *National Institute of Technology, Srinagar*

Thesis: *Design and Analysis of wind turbine blade of S809 series Airfoil using Computational Fluid Dynamics.*

Supervisor: Prof. G. A. Harmain

Dec 2002 – Sept 2007 **Bachelor of Engineering**, *University of Kashmir, Srinagar*

Thesis: *Study of Envirolet model for the extraction of wastes from house boats in Dal Lake at Srinagar*

Supervisor: Aijaz Rasool, Retd. Superintendent Engineer JKLAWDA

Work Experiences

April 2017 – Present **Assistant Professor (Substantive Position)**, *Department of Mechanical Engineering*, Institute of Technology, University of Kashmir, Srinagar,(J&K) India

March – April 2017 **Assistant Professor (Contract basis)**, *Department of Mechanical Engineering*, National Institute of Technology Srinagar

March 2011 – April 2012 **Assistant Professor and Head**, *Department of Mechanical Engineering*, Shakawati Institute of Engineering and Technology, Sikar, Rajasthan India

Sept 2007 – Oct 2008 **Technical Officer**, *SMS Paryavaran Ltd*, Turnkey Water Supply pipeline transmission of 750 mm diameter, project under Jammu & Kashmir, Economic Reconstruction Agency, funded by Asian Development Bank

Research Experience

Jan – Feb 2019 **Visiting Researcher**, *Department of Mechanical Engineering*, Faculty of Engineering & Technology, Aligarh Muslim University, Aligarh, (U.P) India

PhD Supervision

PhD Supervision details				
Topic	Scholar Name	Status of PhD	Enroll. Year	Institute
Cooling Pad Thrust bearing with Deep Recesses	Junaid Ahmad Bhat	Simulation Work on going	2019	NIT, Sgr

Invited Talks & Lectures

13th –24th March 2023 **Resource Person**, *Faculty Development Program on (Thermal Characterization and Advanced Measurement Techniques)*, Organised by the Department of Mechanical Engineering, National Institute of Technology, Hazratbal, Srinagar, India

02–06 July 2018 **Resource Person**, *Faculty Development Program on (Advanced Mathematical Tools in Engineering Applications)*, Organised by the Department of Mathematics, Malnad College of Engineering, Hassan, Karnataka, India

Research Project during Ph.D Programme

Jan 2013 – May 2016 Development of a thrust bearing set-up with the introduction of novel concept of cooling within the stationary thrust element.

Manufacturing Company Ducom Instruments Ltd, India

Estimated Cost	60.00 Lakh(INR)
Supervisor:	Prof. G A Harmain

Awards

2015 **Young Scientist, (International Travel Grant) conferred by**, *Scientific Engineering Research Board (SERB), Department of Science & Technology*, Govt. of India

Professional Service and Memberships

Associate Member:	Institution of Engineers (India)
Associate Member:	International Institute of Engineers
Chartered Engineer:	Institution of Engineers (India)
Student Member:	American Society of Mechanical Engineering (ASME)
Life Member:	Tribology Society of India (TSI)
Student Member:	Society of Tribologists and Lubrication Engineers(STLE)

Computer skills

Simulation	Matlab, Ansys 2014(APDL, Fluent, Thermal, Structral), Comsol 3.4
Data Acquisition	NI LabView, AVL Drive
CAD	DS SolidWorks
Word Processing	LaTeX, MS Word
Operating Systems	MS Windows

Languages

English, Urdu, Kashmiri, Hindi

Personal

Date of Birth 20 July, 1982

Citizenship India.

Marital Status and Family Married, 2 Children

Passport Details

Passport No. Z4097468

Journal Publications

[1] Najar F, Harmain G. Influence on temperature profile in an oil film in thrust bearings using an embedded cooling circuitry beneath the pad surface: An experimental investigation. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology.* 2020;234(5):676-692. doi:10.1177/1350650119886508

[2] Kalavathi G, Najar F, Vasundhara M. Performance characteristics of journal bearings (porous type): A coupled solution using Hartmann number and roughness parameter. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology.* 2020;234(5):668-675. doi:10.1177/1350650119886709

[3] A Jameel, G. A Harmain, F. A. Najar. "Large Elasto-Plastic Deformations in Bimaterial Components by Coupled FE-EFGM" *(ICAMT).Vol.2016.No.27th.2016*

[4] Najar Farooq Ahmad, and G. A. Harmain. "Performance characteristics in hydrodynamic water cooled thrust bearings." *Jurnal Tribologi 10 (2016): 28-47*

[5] Najar F A, and G. A. Harmain. "Thermal effects for conventional and water-cooled thrust bearing using finite difference method: comparative analysis," *International Journal of Precision Technology Vol 5.1, Pp 14-26*, 2015

[6] F A Najar and G. A. Harmain, "Numerical Investigation of Pressure Profile in Hydrodynamic Lubrication Thrust Bearing," *International Scholarly Research Notices, vol. 2014*, doi:10.1155/2014/157615

[7] F A Najar and G. A. Harmain, "Blade Design and Performance Analysis of Wind Turbine," *International Journal of Chem-tech & Research*, Vol.5, No.2, pp 1054-1061, 2013

[8] N A Najar and F A Najar, "Comparative analysis of k- and spalart-allmaras turbulence models for compressible flow through a convergent-divergent nozzle," *The International Journal Of Engineering And Science (IJES)*, Volume2, Issue 8th, pp 08-17, 2013

Conferences Proceedings

[1] S Rouf, A H Fazili, F A Najar, "Influence of Roughness Parameter in Hydrodynamic Lubrication: A Special Case of Thrust Bearing," in the *IOP Conference Series: Materials Science and Engineering, Volume 988, International Conference on Recent Developments in Material Science and Applications (ICRDMSA 2020) 25 – 26 September 2020, Chennai India,*

[2] F A Najar and N A Najar, "Experimental evaluation of performance parameters of single cylinder water cooled diesel engine: Jatropha and Mustard oil blends," in the *Proceedings of Eleventh JK Science Congress at University of Kashmir, Srinagar*, 2015.

[3] F A Najar and G. A. Harmain, "Life cycle assessment for hydroelectric power plant thrust bearings," in the *Proceedings of Eleventh JK Science Congress at University of Kashmir, Srinagar*, 2015.

[4] F A Najar and G. A. Harmain, "Thermoelastic distortion and its control in thin film hydrodynamic lubrication thrust bearings," in the *Proceedings of 2015 STLE Annual Meeting & Exhibition, Dallas, Texas, USA*, 2015.

[5] Najar, F. A., and G. A. Harmain. "Novel Approach towards Thrust Bearing Pad Cooling," in the *Proceeding of GT India, American Society of Mechanical Engineers*, 2014.

[6] F A Najar and G. A. Harmain, " Preliminary study of hydrodynamic tilting pad thrust bearing: operating parameters," in the *Proceeding of International Confrence on Industrial, Mechanical and Production Engineering: Advancements and Current Trends at MANIT, Bhopal*, 2014

[7] F A Najar and N A Najar, "Aerodynamic optimization of a wind turbine blade" in the *Proceedings of National Conference on Nanotechnology and Renewable Energy at Jamia Millia Islamia, New Delhi*, 2014

[8] F A Najar and N A Najar,"Computational Study of Transient Compressible Flow through a Convergent-Divergent Rocket Nozzle" in the *Proceedings of International Research Conference on Applications of Engineering and Technology at Pune*, 2014

[9] F A Najar et al "Performance analysis of S809 wind turbine blade" in the *Proceedings of International Conference on Applications of Fluid Engineering at Greater Noida, U.P*, 2012

Books & Chapters

[1] Najar, Farooq Ahmad, et al. Nanomaterials and tribology: An introduction. Nanomaterials for Sustainable Tribology *CRC Press, pp1-23, https://doi.org/10.1201/9781003306276*

Citations

Jan 2014 – May 2023 Cited by

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