Proposal for announcing seat under the Institute Internship Program

(separate form to be filled for seat under Institute funding and project funding)

1. Name of faculty member proposing: Prof. Harlal Singh Mali and Dr Anup Malik
2. Department/Centre : Mechanical Engineering
3. Topic on which work is proposed: Advanced Finishing Solutions for Complex Internal Surfaces
4. Preferred period of internship (after May 20th): Between 20th May 2024 to 5th July 2024
5. Qualification of student (branch/semester of study): B Tech in (Mechanical Engineering / Production and Industrial Engineering / Mechatronics Engineering / Manufacturing Technologies) after 4th Semester onwards
6. Brief description of work (300-500 words): Our research group at MNIT have already been working on the Design, Development and Product Specific Utilization of One Way Abrasive Flow Finishing of Complicated Surfaces through IP Protected Low Cost Indigenized Unidirectional Abrasive Flow Machine, its Media and Tooling since 2008. For Internal Finishing of complex surfaces like Turbochargers, CAD and CAE of One Way AFM Tooling of Turbochargers, 3D printing and machining of designed and developed Tooling for Turbochargers, Synthesis and characterization of One Way AFM Media of various grades, Design of Experiments (DoE) for Finishing, Finishing Experimentations as per DoE, Surface characterization of the pre and post finishing, analysis of results, etc.
7. Expected learning of student (upto 100 words):

   The interns will be able to learn the following: -

   - Fundamentals of Advanced Manufacturing Technologies (AMTs) both in subtractive and additive domain.
   - AFM technologies for AMT based machine building.
   - Using CAD tools for CAM and generative design.
   - Hands on programming practice on FDM Printers.
   - Hands on practice on AMTs like 3D Printing, AFM etc.
   - Hands on practice on measuring instruments like, CMM, Surface Roughness Testers, Rheometer, Profilometer etc.

8. Nature of work: (Experimental/simulation/mathematical modelling/data collection-analysis etc.): Experimental, data collection and its analysis
9. If the seat is under project sponsored category: Yes
   a) If yes, number of seats announced: Two
   b) Name and ID no. of project from which stipend is chargeable: R 1000115165 & Feasibility Study on Internal Finishing of Turbochargers through One Way Abrasive Flow Machine

06/05/24 Anup Malik 6/5/2024

Signature of faculty member : Prof. Harlal Singh Mali and Dr Anup Malik
Name of department/Centre : Mechanical Engineering
Note:

a) Proposing faculty member needs to be available at the Institute during the period internship is offered
b) No extra space or funding than the stipend will be provided by the institute for this purpose