

Experimental and analytical investigations of convective heat transfer over compressor blades, circular, non circular pipes (both internal and external flow) using wind tunnel.

The project by Harish HV, from the Department of Aeronautical Engineering on external and internal forced convection has helped in further development of this field through a wide range of projects on this topic.

INNOVATIVENESS AND USEFULNESS

By setting up of forced convection set up both external and internal thermal flow analysis over aerofoil can be done which is an external flow and analysis of flow through circular and non circular flow can be done which is an internal.

Nearly 8 to 10 projects can be put up in future for both UG and PG students which has been mentioned in future scope of work

Project Impact /Expected outcome

- know only isothermal analysis is been carried out in wind tunnel, with the said project thermal analysis has been carried out

- Experimental set up has been provided for forced convection both external and internal
- control panel for data acquisition like temperature has been provided
- To determine the temperature distribution over the compressor blade at different velocities of air.
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- ▶ Enhancement of heat transfer for flow through circular and non circular ducts by adopting passive method

UTILITY VALUE OF WORK AND FUTURE SCOPE OF WORK

- ▶ Thermal Analysis of flow over duralumin aerofoil for anti icing
- ▶ prediction of thermal boundary layer for different angle of attack
- ▶ Active method can be used for intensification of heat transfer in internal flow
- ▶ Correlation build up for analysis of flow over aerofoil