ADITYA COLLEGE OF ENGINEERING & TECHNOLOGY

Permanently Affiliated to JNTUK, Kakinada, Approved by AICTE, New Delhi

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Aditya Nagar, ADB Road, Surampalem,533437

Department of Mechanical Engineering

Project Title:	Fabrication & performance analysis of parallel connected vortex tubes	
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Abstract	PO's Mapping	PSO's Mapping
Air cooling system is very important for both man and machine. Vortex tube cooling system is non-conventional type of cooling system which is not used widely for cooling purpose, but it has many advantages over the conventional cooling system. This project attempts have been made to construct a parallel flow vortex tube with various geometrical parameters of nozzle, throttle valve etc., by fixing the cold mass fraction to increase the COP of the vortex tube. It is a simple a simple, small and light weight mechanical device that separates air into hot and cold streams. It has no moving parts.	PO1, PO2, PO3, PO5, PO7, PO9, PO11	PSO1, PSO3

PO1: Engineering Knowledge	**PO5:** Modern Tool usage	**PO9:** Individual & Team Work
PO2: Problem Analysis	**PO6:** Engineer & Society	**PO10:** Communication Skills
PO3: Design & Development of solutions	**PO7:** Environment & Sustainability	**PO11:** Project Management & Finance
PO4: Investigations on complex problems	**PO8:** Ethics	**PO12:** Life Long Learning
PSO1: Mechanical Engineers must be able to analyze, design and evaluate mechanical components and systems using cutting-edge software tools as required by the industries from time to time.	**PSO2:** The ability to work in manufacturing and other sectors' operations and maintenance plants	**PSO3:** As part of a team or individually, plan and manage activities in micro, small, medium and large enterprises

Relevance to PO's and PSO's

PO1	Applied the subject knowledge in calculation OF Coefficient of performance
PO2	Studied and analysed existing designs of Vortex tubes
PO3	Design the components of Vortex tubes based on suitable L/D ratios
PO5	Usage of Software tools to design and analyse and also product development using 3 D printing techniques.
PO7	This design should be eco-friendly, durable compare with the existing designs.
PO9	Fabrication of the vortex tube with parallel connected system is done by the team collaboration
PO11	This system can be developed with flexible for low cost.
PSO1	Future scope of this project improvised in industries as the usage of technology attains more about this project.
PSO3	Individual can develop this type of systems in Small and micro industries.