



Aditya College of Engineering & Technology

Aditya Nagar, ADB Road, Surampalem – 533437

Department of Mechanical Engineering

Academic Year: 2020-2021

Project Title:	CFD Analysis of Solar Flat Plate Collector	
Guide Name:	P.V.S MURALIKRISHNA	
Students Name with Roll No.:	18P35A0379	REDDY RAGHURAM
	18P35A0382	SARISE SRINIVAS
	18P35A0373	PERALA SATISH
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	17P31A0370	POLNATI NAGA SUBRAHMANESWRA SWAMY

Abstract	PO's Mapping	PSO's Mapping
The objective of this work is to compare theoretically and experimentally with the work done by using computational fluid dynamics (CFD) tool with respect to flow and temperature distribution inside the solar collector. The outlet temperature of air is compared with experimental results	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO11	PSO1, PSO2, PSO3

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

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



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Relevance to PO's and PSO's

PO1	Applied the subject knowledge in calculation for design and systems
PO2	Studied and analysed existing designs with CFD
PO3	Structure of the frame is designed under Ansys.
PO4	In the Calculation part of frame, different materials are taken into the consideration.
PO5	Solid works and Ansys workbench tools are used for design and simulation.
PO6	Design and development using CFD Analysis
PO9	Fabrication of the FPC using Ansys workbench and CFD is done by the team collaboration
PO11	Business plan contains the work flow and cost control
PSO1	Design and development of FPC is compared by using CFD
PSO2	Maintenance of the Solar FPC and the sub systems done.
PSO3	Entrepreneur skills attained

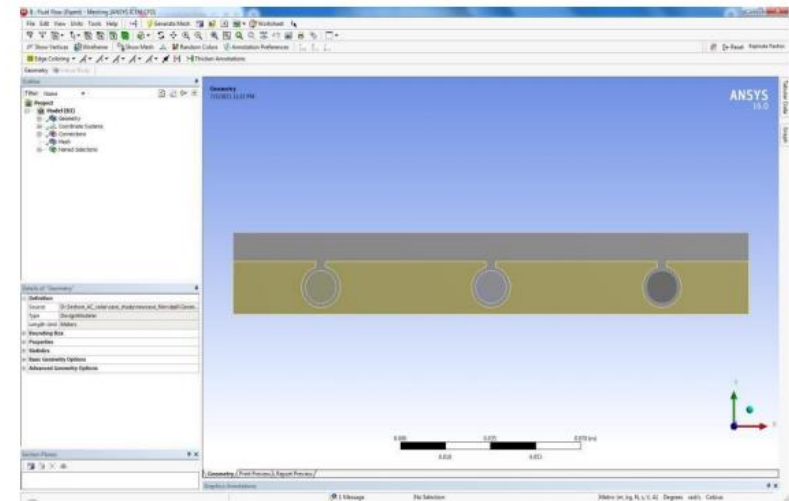


Fig: 5.5(a) The Geometric model in Ansys Mechanical Workbench: