

25.08.2023

Annual “final” project 2023 – 2024

Development of High Efficiency Water Chiller Based on Liquid Piston Compressor-Expander Module.

Goals and Objectives:

1. Design of high efficiency liquid piston compressor – expander module utilizing CO₂ as refrigerant in both trans-critical and subcritical region.
2. Integration of this module into a chiller and evaluation of its performance in design and off-design conditions (different ambient conditions).
3. Cost evaluation of the chiller and estimation of energy savings compared to conventional chiller.

Pre-requisites: Thermodynamics 1, Fluid Mechanics 1, Heat transfer, Fluid Mechanics 2 (not compulsory but is a definite advantage). Basic knowledge of the work principles of pumps and compressors is required.

The project in full format is intended for a team of two students

The project in reduced format can be offered to a single student.

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