



Module PMRF-ISSS070

Thermal Engineering of Supercritical Carbon Dioxide (sCO₂) Power Technology

Name of the PMRF student

Shrey Sahai Gupta

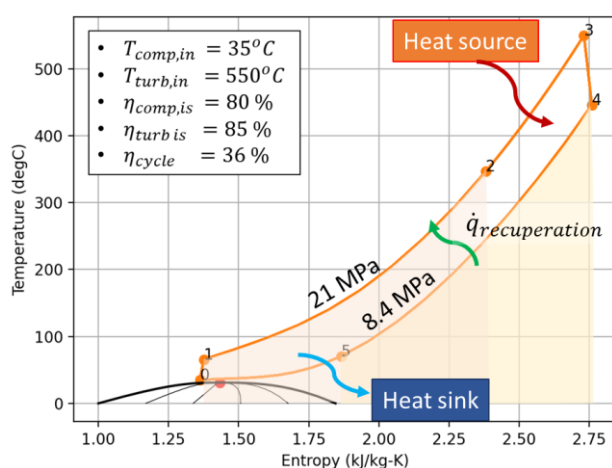
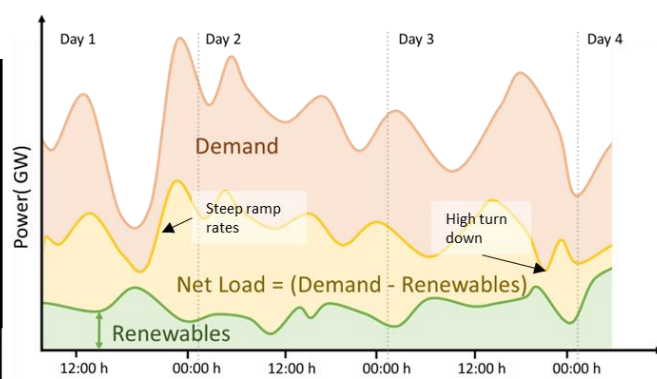
Details of the content of the module

Required background of the students taught

- Mechanical Engineering
- Chemical Engineering

1. Introduction to sCO₂ power cycles : The mismatch of energy supply / demand | The sustainability of increased conversion efficiency
2. Review of Gas and Vapor Power Generation cycles and their limitations : The open operating window for sCO₂ Brayton cycles
3. Critical Point and Thermophysical properties: General Thermodynamic Relations and Helmholtz based equation of state
4. Cycle Modelling, Design and Optimisation: Introduction to real fluid heat Exchangers, and turbomachines.

The module will involve recorded lectures on theory and hands-on numerical modelling examples. Doubt-solving discussion will be held accordingly.



Schedule of the module

Starting Date: 5th December 2023

Lecture Hours: Weekly recording uploaded every Saturday 07:00 pm

Total Number of Hours: Forty-Five (Tentative)

Meeting link : Will be shared later

[Link](#)

Contact email ID: issf.forum@gmail.com

Registration link:

<https://forms.office.com/r/wiUEjTLsGT>