

Master Thesis Brief Description

Thesis Title	Stirling Engines for Low-Temperature Solar-Thermal-Electric Power Generation
Programme of Studies	MSc in Sustainable Energy Systems
Course	SES 701 Maser Thesis I + II
Area of Study	Computational Building Physics – Whole Building Energy Analysis
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Supervisory Committee	Dr. George Karagiorgis, Professor, Frederick University Dr. Constantinos Hadjiyiannis, V. Lecturer, Frederick University
Semester	Spring Semester 2020
Short Description	<p>In this project a solar thermal electric power generation system utilising a moderate temperature Stirling engine to generate electricity is introduced. The aim is to design the system and analyse its performance for the use of commercial electricity generation and the validation of the design for future development. The Stirling Engine is the main component of the system and is used to generate power utilising the heat that is provided by the solar collector system. The key components of the whole design include the solar thermal System with the collector generating the heat that is used by the sterling engine for power generation. The design is trying to take advantage the low concentration ratios of solar radiation collector and generate electricity at a competitive low-cost system. This storage of energy can be made via water tank commonly used in households today. This method of storage is inexpensive and safe.</p>