FABRICATION AND PERFORMANCE ANALYSIS OF SHELL AND TUBE HEAT EXCHANGER SYSTEM

INVENTOR: Muhammad Izzat Aiman bin Ahmad Padzil
FACULTY: Civil Engineering Technology
UNIVERSITY: Univerisiti Malaysia Pahang
EMAIL: izzataiman1601@gmail.com
CO-INVENTORS: Nurul Asyiqin binti Rosli , Dr Nadzirah bte Mohd Mokhtar

PROJECT BACKGROUND

The shell and tube heat exchangers (STHE) are still the most common type in uses. A typical STHE are built of round tubes mounted in a cylindrical shell with the tubes parallel to the shell. One fluid flow inside the tubes, while other fluid flows across the shell. STHE offer great flexibility to meet almost any service requirement.

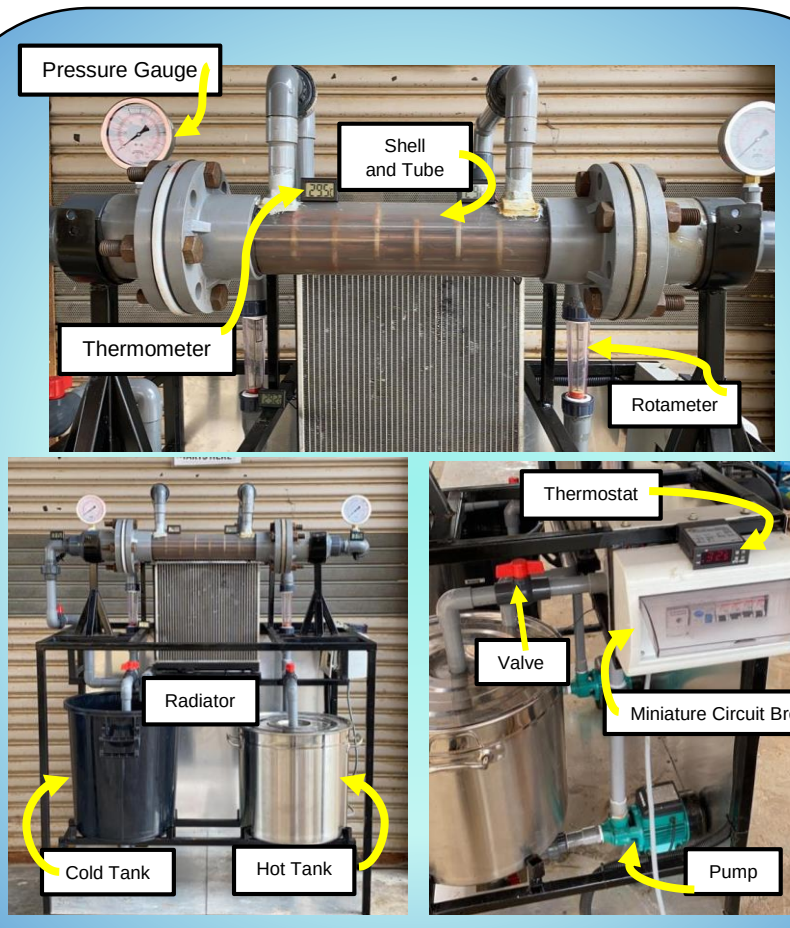
OBJECTIVES

1) To design and fabricate shell and tube heat exchanger system
2) To perform analysis on STHE system to ensure the effectiveness under difference flowrate on hot inlet and difference temperature

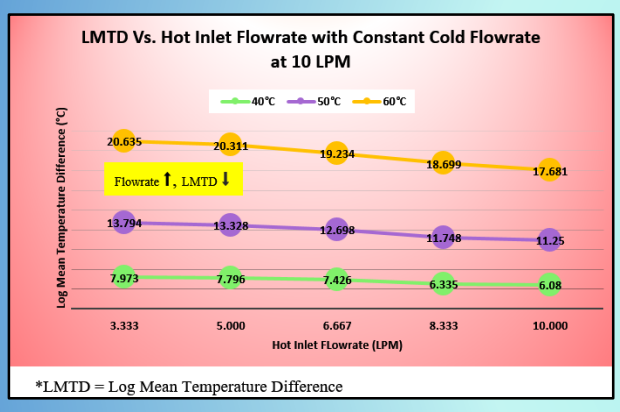
BENEFITS

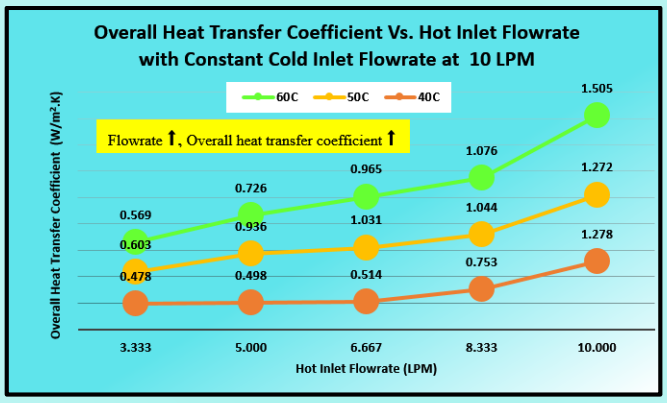
- Available as educational kit
- Easy to be cleaned and maintained because the equipment can be dissembled for the purpose
- Portable system – it is easy to be moved around and smaller in size suitable for the educator and student

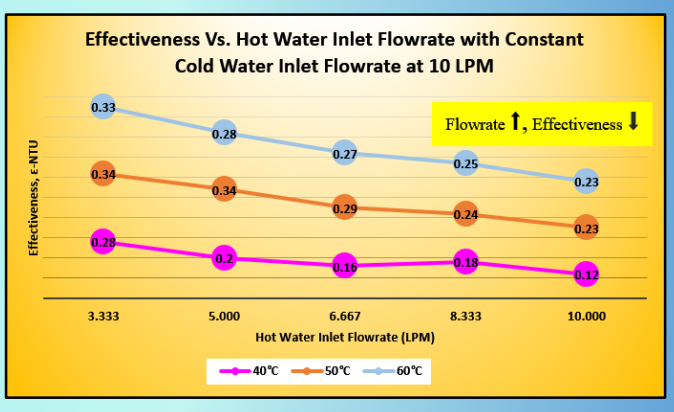
PRODUCT FUNCTIONALITY



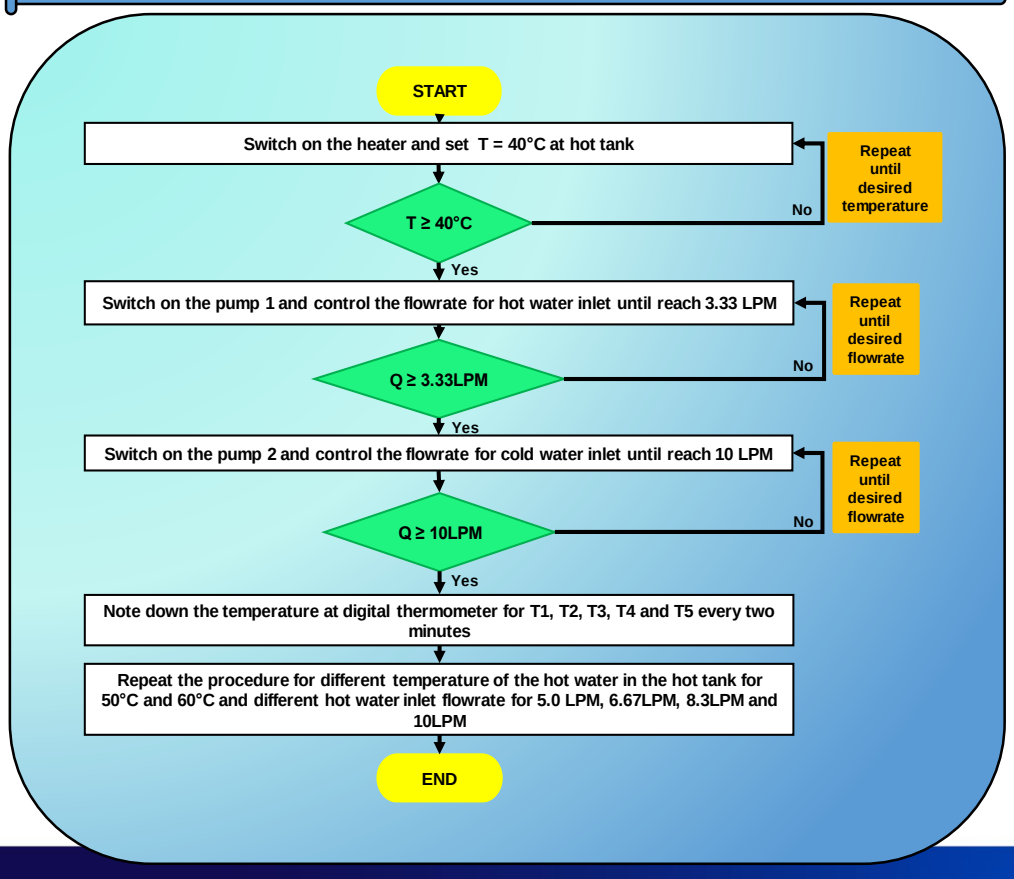
PRODUCT RESULTS







METHODS



AWARD

Award from FTKA for the best project Senior Design Project

MARKETABILITY

Heat Exchanger Market is projected to reach USD 22.59 billion by 2023, from USD 13.5 billion in 2017 (Source: www.marketsmarkets.com)

Market Survey

Potential Market

Suitable for school, university or any educational platforms that need training or simulation on how the heat exchanger system works

Expected Selling Price: RM4000 – RM5000

ACKNOWLEDGEMENT

PROJECT ADVISOR
Name: Dr. Nadzirah bte Mohd Mokhtar
Contact no.: +609-5492320
Email: nadzirah@ump.edu.my