

To: Dr. David Trevas
From: Team 3 - Heat Pipe
CC: Amy Swartz, Teaching Assistant
Date: 07/04/2018
Subject: Analytical Analyses | Team Memo

Heat pipe team camp up with five different tasks need to be analyzed analytically. Each team member assigned a task which is more in-depth for our project.

Kaled Aleweehan

He will be responsible for working Fluids without wicking material. Also, he will provide how the changing in pressure will affect the functionality of working fluids. For this task, he will use thermosphere and analysis the working fluid for this type of heat pipe. The input of the system is the gravity and the output is the rate of heat can be transferred. This is important for the project and help in designing phase as fluids will determine in this analysis, so the design will select according to this analysis.

Abdullah Almutairi

He will be responsible for the wick materials and how they affect the changing in temperature and the flow rate. Also, he will discuss the types of wick materials. Furthermore, he will talk about how the wick materials affect the capillary action. In this analytical analysis, there is an input and output in the system. The input of the system is providing wick material. On the other hand, the output of the system is how fast the fluid can go through the wick and changes in temperature. It will help the team in designing as well as the analysis will have determined the temperature effect, so the design will select according to the analysis result.

Waleed Almutairi

He will be in charge of the amount of heat flux generated and how the heat flux will be changing in values between different materials. Also, he will analyze the difference temperature that will affect the heat flux within a vapor chamber heat pipe at both sides. Indeed, the input for the heat pipe in this task is temperature, and the output for the heat pipe is the amount of heat transfer which is the heat flux(q). This analysis will help the team in manufacturing phase when the team will select the material so this analysis will help them in selecting best material.

Abdullah ben Gheyam

He will analyze how the pressure changing the boiling point. He will provide how boiling point is a function of pressure. The input of the system is providing pressure and the output of the system is changing in boiling point. This analysis will help in designing phase to select the design and will help the team in manufacturing phase to manage the pressure with boiling point.

Omar Alotaibi

He is the last team member and he will be responsible for deriving the thermal conductance from the heat pipe and figure out how everything's works. Also, how fast the staff is boiling, conducting, and moving. This analysis is useful for design, as thermal conductance will determine so the team analyze the design according to this analysis and will finalize the design.