Research Interest May 2017

Dr. Ali ŞEFİK

My research interest is mainly focus on the fields of energy, renewable energy, heat transfer, fluid mechanics, thermodynamics, experimental fluid mechanics and computational fluid mechanics.

My first project was to simulate two phase flow in the pipe work by FLUENT during my master thesis. Later, I started my PhD studies and found an opportunity to take my previous research further and I have started a project called "Investigation of bubble behaviours in wet central heating systems". Bubble formation in such systems finds its origins from the supersaturated conditions occur on the heat exchanger of the boiler. Dissolved gases in the liquid release as bubbles and travel through the pipework causing two-phase flow. In this project, two-phase flow is investigated by capturing air bubbles through square section sight glasses with high speed camera and statistical data is obtained with image processing. Then these data are used to investigate two-phase flow structure in vertical and horizontal pipelines of central heating systems by the means of void fraction, bubble distribution and velocities. Additionally, CFD software "FLUENT" is used to validate the experimental data.

I have not involved any new project at the moment.