

Project Overview

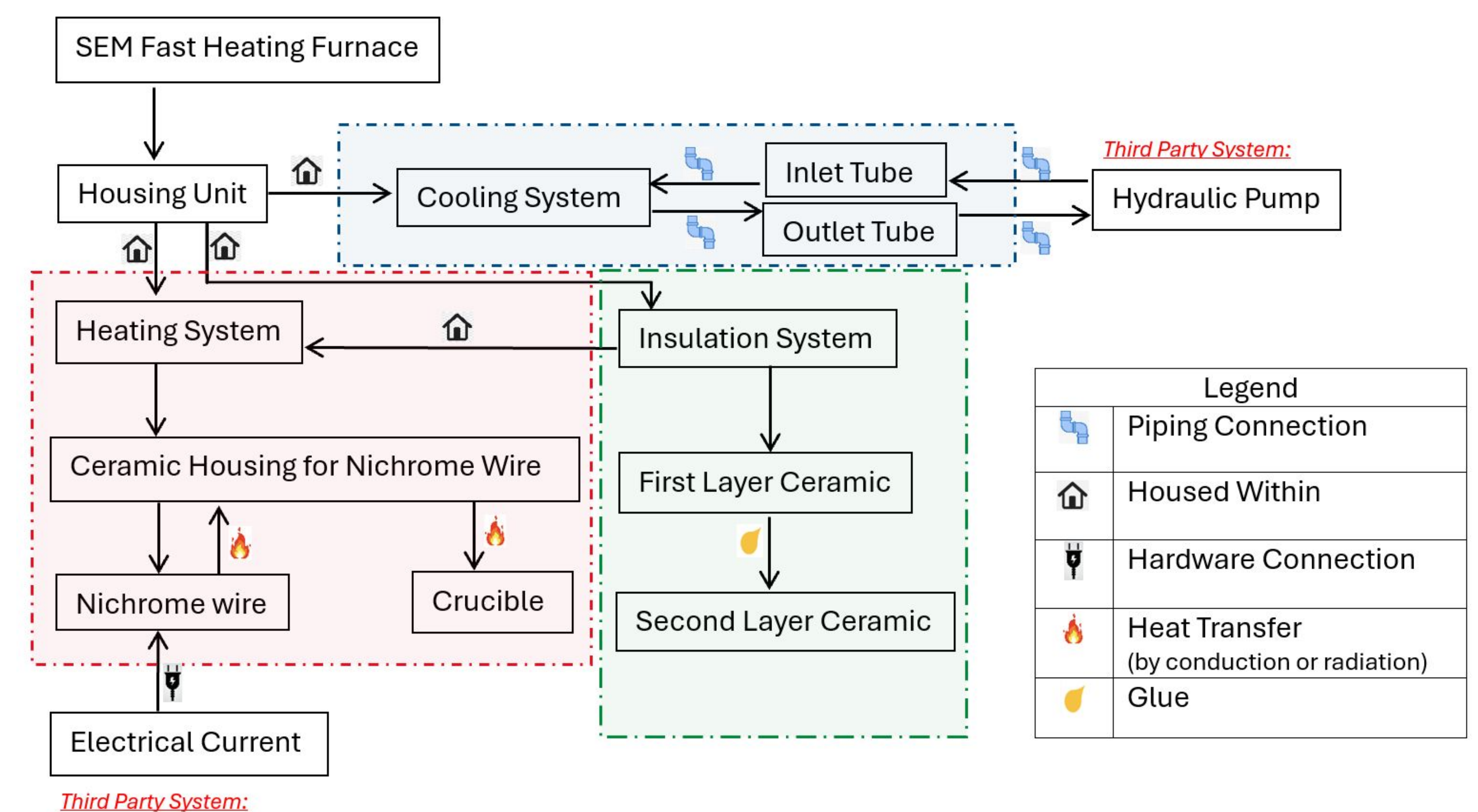
In collaboration with Dr. Wenwu Xu, our team was responsible for developing a fast heating furnace for use in a Scanning Electron Microscope (SEM). The system is designed to rapidly reach high temperatures.

Testing & Analysis

Using the SEM's data acquisition system to read temperatures from the thermocouple on the crucibles top and bottom surface. Testing for the rate of heat (minimum of 50C/min) as well as reaching the goal of 900C. While also assuring the safety of the microscope within the system.



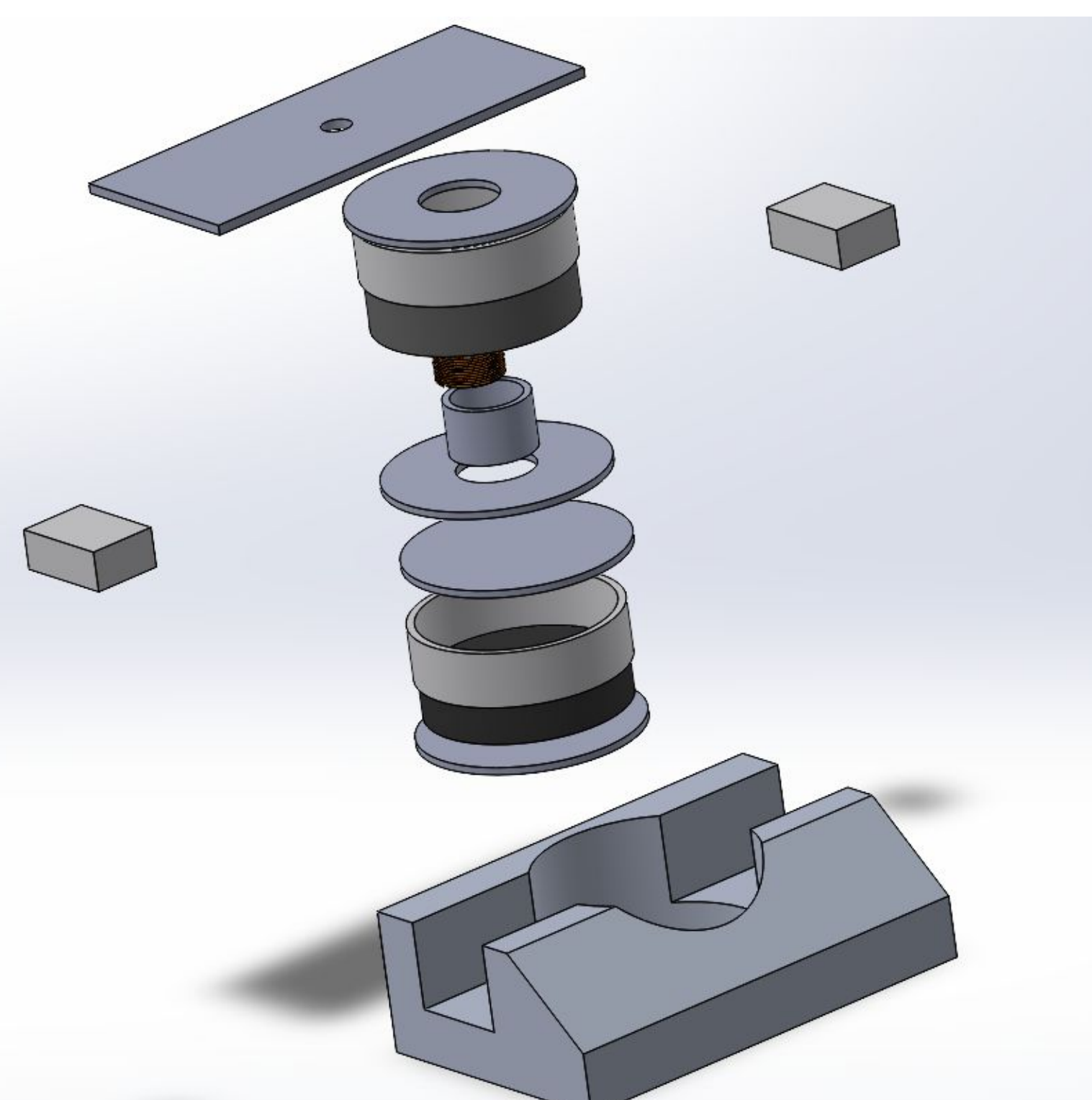
System Level Diagram



Our Team



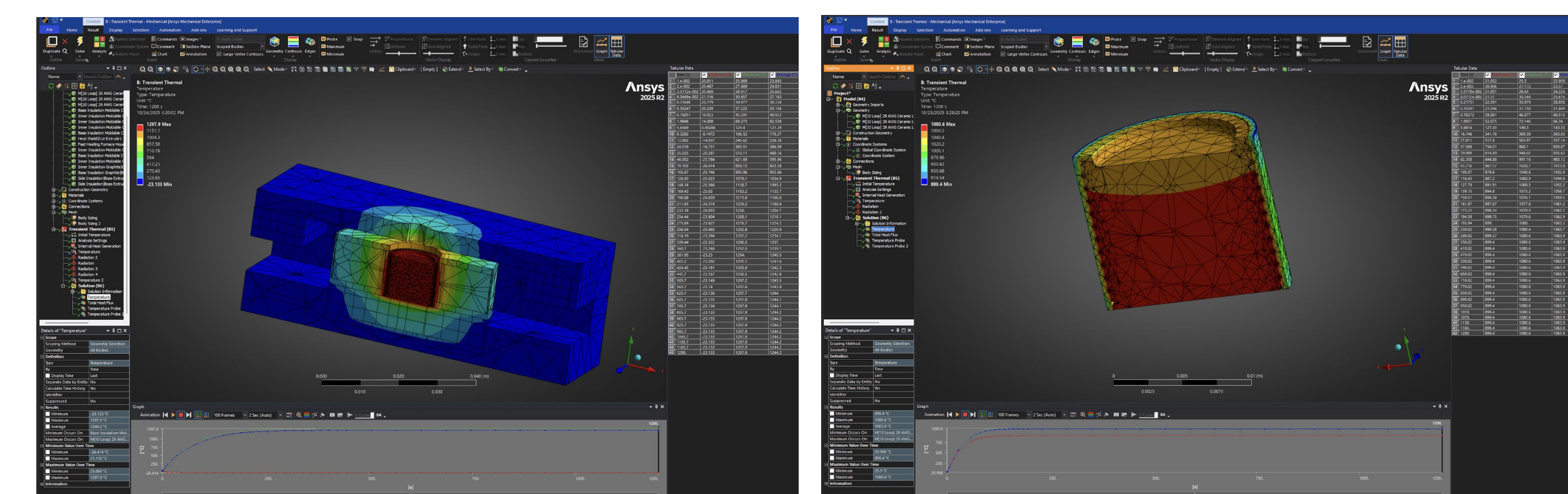
CAD Exploded View



Manufacturing



ANSYS Simulation



Ansys simulations that show that our design for the fast heating furnace would achieve our goals.