Overview
Air Products completes many batches of a variety of different fluids every year, but before their products can be shipped to the customer, the product quality must be ensured. The quality is ensured by taking a viscosity measurement and verifying that it falls within a certain range. It currently takes Air Products 2-3 hours to obtain a viscosity measurement. The goal of this project is to design a process that will shorten the time it takes Air Products to obtain a viscosity measurement, without altering the composition of the fluid.

Objectives
The new design needs to shorten the amount of time it takes to ensure product quality without altering the composition of the fluid. The new process must also be simple enough that it can be easily followed by the operator.

Approach
- A list of over 10 concepts was generated.
- Air Products hosted a meeting for the team to show them the current process that is used and to discuss the customer needs.
- A detailed list of customer needs was compiled.
- An AHP Pairwise comparison Chart was used to rank the needs of the customer.
- An extensive patent search was conducted.
- A Pugh Concept Scoring Matrix was used to choose the best design based on customer needs.
- Close communication was kept with the project sponsor by email and weekly progress reports.
- Weekly video conferences were conducted, using both Adobe Connect and the Polycomm system so that the team members could have weekly meetings, despite working in different countries.
- CAD models were created to aid in the design and assembly.
- Prototypes were manufactured to illustrate the design of the devices.
- Tests were done to determine the feasibility of the process.

Outcomes
Air Products was satisfied with the final design of the process.
- The new process takes 45 minutes to complete.
- Air products can test three samples in the time it currently takes them to test one, which will increase their annual profit.
- A critical aspect about this process is that it can be used for the variety of different fluids that Air Products produces.