

## **Design and Implementation of an Intelligent Scheduling System for Automated Chemical Workflows**

Automated methods are increasingly used in chemical laboratories, but managing and scheduling these expanding workflows capable of coordinating multiple instruments and this projects in real time. By focusing on workflow optimizers, evaporators, and purification units operate smoothly and efficiently. Using rule-based logic and liquid including delays, equipment failures, and variable reaction times dynamically to changing laboratory conditions.

The work forms part of a broader Master's/PhD by Professor Kasper Moth Poulsen and PhD student Victor Greeng materials who seek motivated students with strong programming and problem-solving skills.

### **Objectives:**

1. Create an adaptive, real-time communication system between them, coordinating multiple laboratory instruments.
2. Implement intelligent delays, decision-making errors enables dynamic rescheduling in response to experimental results.
3. Track and validate status, user-friendly monitoring platform, including interface design and workflow evaporator equipment failures, variable reaction times.

**Supervisor:** Kasper Moth Poulsen [ppl-ai-file-upload.s3.amazonaws]