

Instrumentation & LabView

Fall 2006

TO: Engineering Development Branch

FROM: Engineering Division

SUBJECT: Instrumentation & LabView

Our company is considering reducing the cost of our chemical dispensing system by eliminating the flowmeter and operating the pump in feedforward rather than feedback mode. In order for this project to be successful, we first need to calibrate the pump and determine which parameters (pump speed, liquid viscosity, delivery pressure, tubing material and wall thickness) most significantly affect the pump output.

Please assemble a data acquisition system using LabView© that will turn the pump on and off, control and measure the pump speed, measure the flowrate, pressure, and temperature. Also, design and conduct a factorial design experiment that will provide the required parameter information. Due to the limited time constraints and the difficulties in switching between the two available fluids (water and glycerin), please coordinate your efforts with another of our engineering teams, each using a different fluid.