Data management system in clean rooms environment

Martin Nebas, Eng. MSc Candidate Department of Industrial Engineering Polytechnique Montreal martin.nebas@polymtl.ca	Samuel Bassetto, Eng. Msc, PhD Department of Industrial Engineering Polytechnique Montreal samuel-jean.bassetto@polymtl.ca

The work presented by this poster is focused on the optimization of an information management system for an institute of applied research It aims to reduce processes development cost and to enhance the cross learning experience overall design of experiments conducted in the laboratory. A case study takes place in 3iT, a nanotechnology research center in Sherbrooke, Quebec, Canada. Research activities of 3iT are centered on high-tech devices (photolithography, thermal treatment IR and UV, nano fabrication, 3D printing...). Workshops of this research center are settled in a class 100 clean room facilities. Specialized technicians take care of tools preparation and maintenance. Currently, when a researcher wishes to carry out a machine test, or step, on one of his samples, he transmits the necessary information through the Sample Management System. This software is linked to the institute's database. Improvements regarding information sharing amongst experiences and tool qualification have been identified as key elements to reduce development costs and duration.

Technicians as well as researchers face multiple interfaces that prevent them to work efficiently, retrieve and share informations, data in an adequate manner. Some devices' computer terminals are not connected and the floor layout limit access to online terminals. Moreover, the results format depends on the machine, and post-operative data (results and maintenance data) needs to be downloaded by USB key or written down. Ultimately, the most problematic tasks are also those with no value added to the research process, namely input data consultation and output data saving on the database. The app presented in this poster aims to solve this problem. It create a unified interface for operators (being technicians or researchers) connected with an online storage on google drive. Even in its prototype form, the app is fully functional. The poster shows how photolithography steps has been covered.