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Offer for master thesis project within the SB/ISIC/SwissCAT+ research infrastructure

Project 4 : Development of an automated solid properties testing station

In order to be automatically sampled and handled in a fully integrated chemistry setup, solids must be correctly described (granularity, compressibility, stickiness...). Currently, no existing equipment is able to perform such automated characterization. The goal of this project is to initiate the development of such an automated solid characterization platform. For this purpose, the student will have to evaluate different approaches (mechanical, optical,...) and analyze the sampling-testing-processing workflow. Depending on the progress of the project, a first prototype could be built during the Master's thesis.

Expected deliverable:

1. To perform a complete bibliography of the domaine
2. To perform a method analysis and selection based on the bibliography and on lab feasibility tests
3. To analyze and propose a complete automation workflow for working device
4. If possible, to initiate, in collaboration with the engineering group of Swiss CAT+, the development of a first prototype of such a tool.