A QCM-D Study of the Enzymatic Degradation of Cellulose Thin Films\textsuperscript{1} DAN GLICKMAN, OLEH TANCHAK, MICHAEL REID, AMANDA QUIRK, DARRELL COCKBURN, COLIN MACDOUGALL, ANTHONY CLARKE, JACEK LIPKOWSKI, JOHN DUTCHER, University of Guelph

— A sophisticated surface-sensitive technique, the quartz crystal microbalance with dissipation monitoring (QCM-D), was used to study the interaction of a mixture of cellulolytic enzymes from the fungus T. reesei with cellulose thin films deposited onto polycrystalline gold surfaces. It was found that the QCM experiment was sensitive to two processes that occur during the enzyme mixture-cellulose thin film experiment: adsorption of the enzyme to the film surface, and the subsequent degradation of the cellulose thin film. A model describing the measured frequency shift in the QCM data will be described, which gives excellent fits to the experimental data.

\textsuperscript{1}Natural Sciences and Engineering Research Council (NSERC) of Canada