

Abstract Submitted
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A QCM-D Study of the Enzymatic Degradation of Cellulose Thin Films¹ 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.

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