

Seminar

Tuesday June 10, 2008, 10:30 am
205N WSEC

Pizza and beverages will be served following the speaker

Modeling liquid and adsorbed/deposited layer properties with impedance-based quartz crystal microbalance

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The impedance based quartz crystal microbalance, QCM-Z, provides unique information on changes in the mass and visco-elastic properties of adsorbed or deposited layers and liquids on a quartz crystal. The QCM-Z technique has for a long time been routinely used to provide information about a wide range of interfacial processes both at air-solid and liquid-solid interfaces. The mass change is proportional to the change in resonance frequency and any change in electrical resistance suggests that the viscoelastic nature of the layer has been modified. Measurement at several harmonic (overtone) frequencies facilitates calculation of complex visco-elastic parameters. Multifrequency QCM-Z has found use in many areas of academic and industrial research, including surface chemistry, electrochemistry, biosciences, polymer science, materials science and fluid viscoelastic studies, just to name a few.

The present communication explains how the QCM-Z technique can be utilized to model liquid and adsorbed or deposited layer properties. This is also demonstrated with a few real applications where this technique has been applied with success.

Hosted by: Professor Mathias Schubert and J.A.Woollam Co., Inc.