

Abstract Submitted  
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**Contact Properties of Surface Modified Elastomeric Membranes and the Recognition of Specific Interactions** DAVID A. BRASS, KENNETH R. SHULL, Northwestern University — Specific interactions (i.e. Biotin/Avidin, etc.) between modified brushes on both a thin elastomeric membrane and a gold coated quartz crystal surface are investigated. To quantify the effect of different end groups, the interactions between opposing unfunctionalized brushes or between an unfunctionalized brush and a substrate were first analyzed. The quartz crystal resonator provides a measured distance between the membrane and quartz surfaces. The surface of the quartz is modified with poly(ethylene glycol) (PEG) molecules with thiol end groups that bond to the gold electrode surface. The membrane surface is modified through the use of Langmuir layers of amphiphilic molecules, producing PEG brushes that extend into the aqueous environment. Self consistent field theory and models of the acoustic wave propagation were used to establish the sensitivity of the technique to the specific interactions arriving from the end groups.

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