SUM FREQUENCY GENERATION STUDY OF ETHYLENE GLYCOL ON THE SILICA SURFACE

DINGFANG LIU and HEATHER C. ALLEN, *Department of Chemistry, The Ohio State University, Columbus, OH 43210*.

The adsorption of ethylene glycol onto the fused silica surface was studied by vibrational sum frequency generation spectroscopy. The clean silica/air SFG spectra shows that, in the OH stretch region (3000-3800 cm-1), there is only one dangling silanol OH stretch at 3760 cm-1 for 20relative humidity, whereas both silanol and broad OH stretching peaks (3200 and 3400 cm-1) were observed after the fused silica was immersed in neat water. At the air-silica interface, the adsorption of ethylene glycol was observed even after it was thoroughly rinsed with neat water for 30 minutes. The disappearance of the silanol OH stretching peak shows that the ethylene glycol molecules occupy most of the surface silanol sites.