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The Interactions of Surface Hydroxyl Groups on Sapphire with Hydrophobic and Hydrophilic Polymers ANISH KURIAN, SHISHIR PRASAD, ALI DHINOJWALA, The University of Akron — We have studied the buried interface between sapphire and various hydrophobic and hydrophilic polymers using infrared-visible sum frequency generation spectroscopy. We have observed a free hydroxyl peak on sapphire surface between 3550 and 3720 cm^{-1} . The peak position of the surface hydroxyl peak is strongly affected by the orientation and interaction of the polar groups of the polymers with the sapphire surface OH groups. These interfacial interactions have important consequences on wetting, adhesion and friction.

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