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Effect of Silane Sizing on Polymer-Glass Adhesion MOSHE GOTTLIEB, HAIM DVIR, Ben-Gurion University, Beer Sheva, Israel — Glass slides sililated with organofunctional silanes were used to study polymer-glass interaction strenth. The extent of surface coverage, surface properties and topology were experimentally determined for the different silane treatments. For the different polymers were deposited on the silane treated glass the strength of polymer interaction with the silane treated glass was investigated using contact-mode Atomic Force Microscopy and the adsorbed layer thickness was determined optically. Typically, for each polymer a characteristic layer thickness was measured irrespective of the silane treatment or strength of adhesion. Adhesion strength was attributed mainly to van der Waals interactions with no indications of large scale covalent bonding between the polymer and the surface. The interaction strength and affinity of the polymer to the surface is dominated by hydrophobic/hydrophilic interactions and hydrogen bonds between grafted side groups and the functional groups of the silane treatment.

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