Dense Passivating Poly(ethylene glycol) Films on Indium Tin Oxide Substrates

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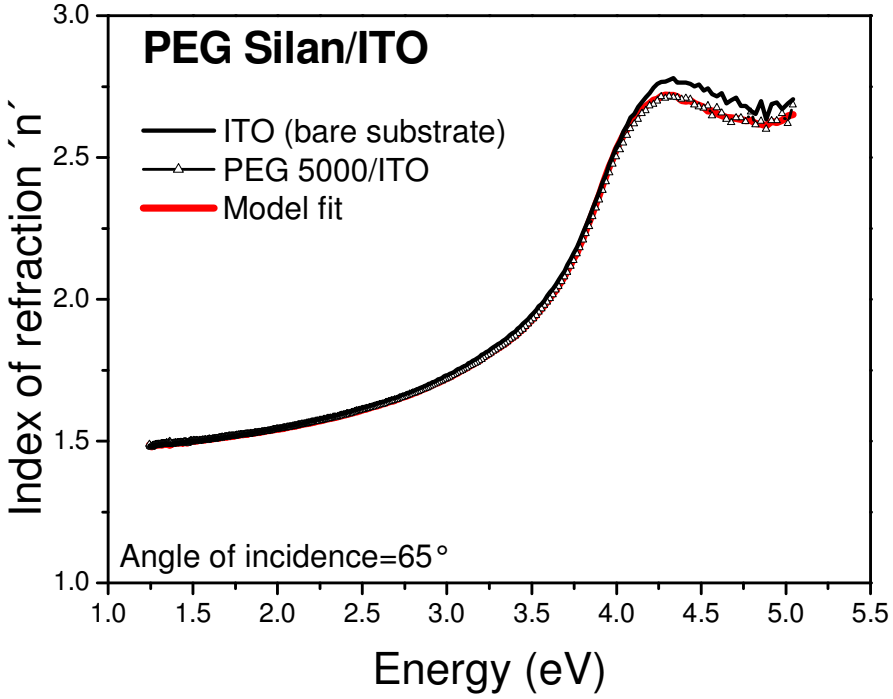

Figure S1. The plot displays the spectral dependence of the refractive index n as conducted by ellipsometry for substrates ITO / glass (solid line) and PEG / ITO /glass (black circles). The fit (dashed line) to PEG / ITO / glass curve was obtained by applying an oscillator model. In the fitting procedure, the PEG adsorption was modeled as a Lorenzian oscillator with an energy of 4.9 eV and a FWHM of 0.39 eV. The monotonous increase of n with energy up to about 4.6 eV is consistent with an optical transition represented by an oscillator with a resonance energy close to 4.9 eV.

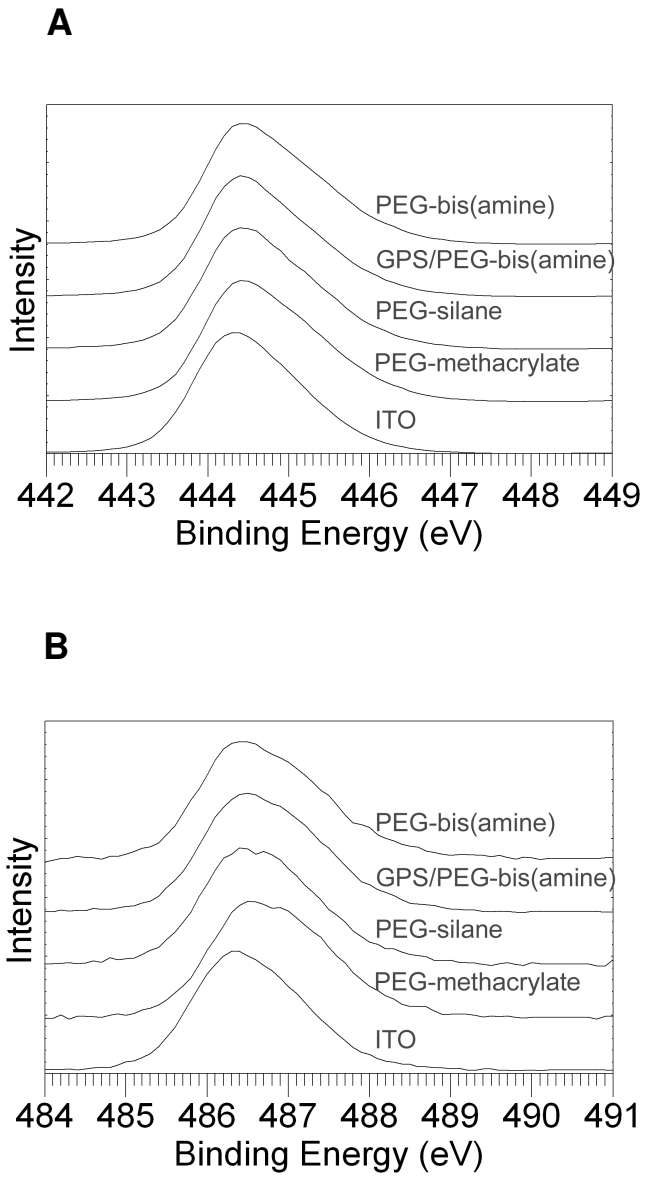

Figure S2. High-resolution XPS spectra of (A) In3d at 445 eV and (B) Sn3d at 487 eV of blank and PEG-treated ITO surfaces.

Table S1. Surface Density of Peaks in AFM Topographic Images of Bare and PEG-modified ITO Surfaces[a]

	Number of topographic peaks analyzed	Density (peaks/μm^2)
ITO cleaned	272	136
ITO/PEG-bis(amine)	229	115
ITO/GPS/PEG-bis(amine)	156	78
ITO/PEG-methacrylate	96	48
ITO/PEG-silane	85	42

[a]The identification of peaks was performed as described in Fig. S3.

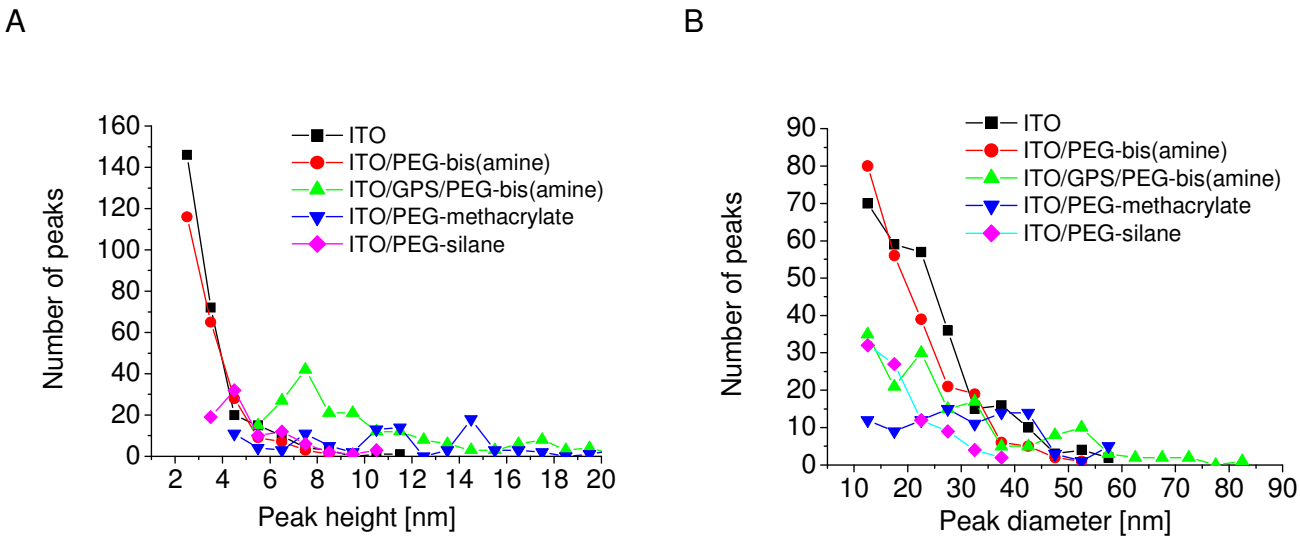

Figure S3. Histogram analysis for (A) peaks heights and (B) peak diameters in AFM topographic images of bare and PEG-modified ITO surfaces. For the identification of peaks, the threshold value was defined to be the average background level plus the rms noise of the AFM topographic images of the surfaces. Any topographical features above the threshold were counted as peaks. Peak heights were calculated from the difference between the maximum height and the threshold value. Peak diameters are the full-width at half maximum of the peaks.

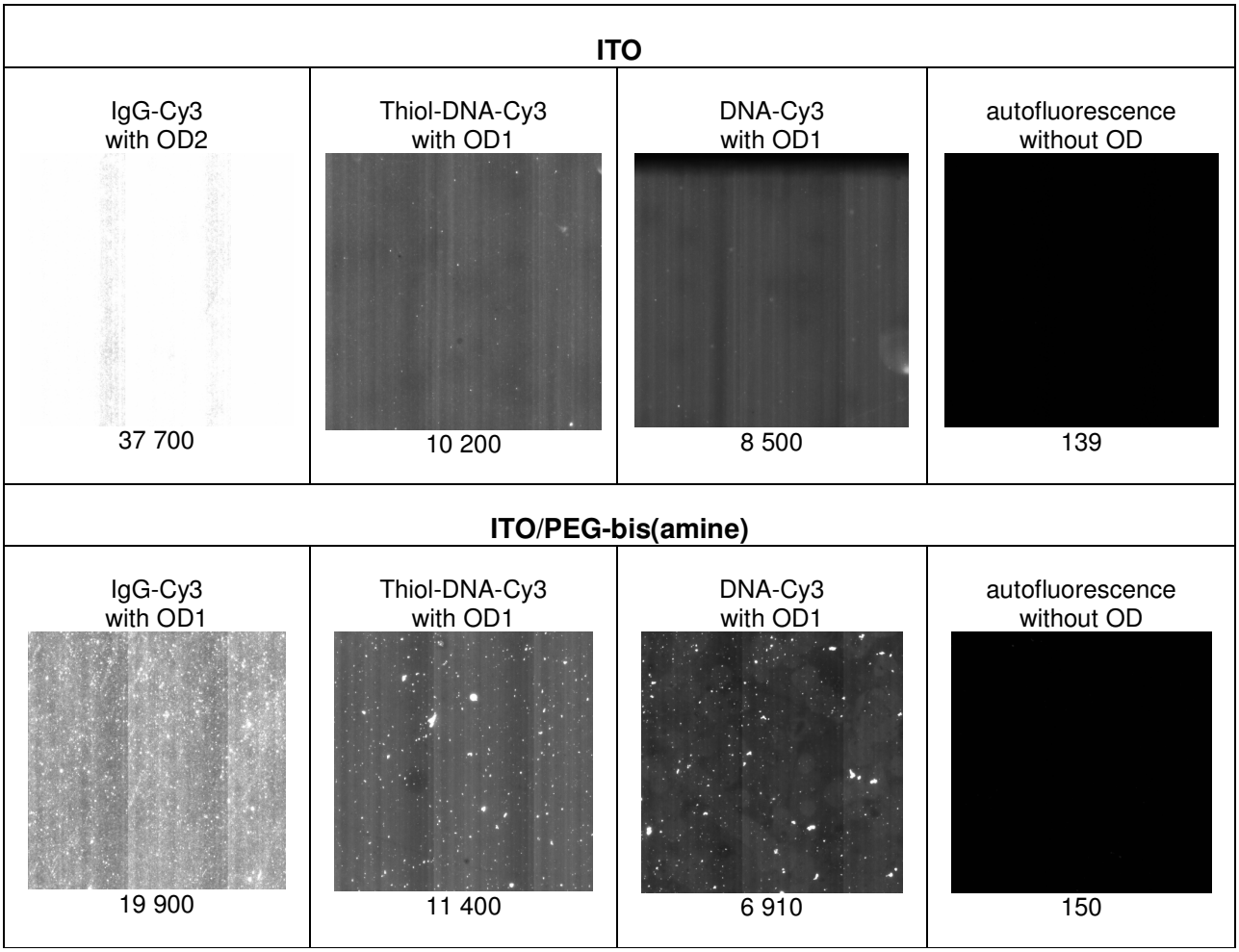

Figure S4-A. Fluorescence micrographs of bare ITO and PEG-functionalized surfaces treated with 1 µM IgG-Cy3, 1 µM Thiol-DNA-Cy3, and 1 µM DNA-Cy3. The micrographs show an area of 78 x 78 µm. The average fluorescence brightness is indicated at the bottom and the optional use of an optical density filter (O.D.) is indicated at the top of each micrograph. The parallel vertical lines in the brighter images are due to the scanning mode of the fluorescence microscope. Each fluorescence image is composed of several aligned vertical scan strips around 80 µm in width. The lines in Fig. 3 of the main manuscript were removed by image processing. However, the quantitative fluorescence brightness values were obtained from the original unadjusted scans.

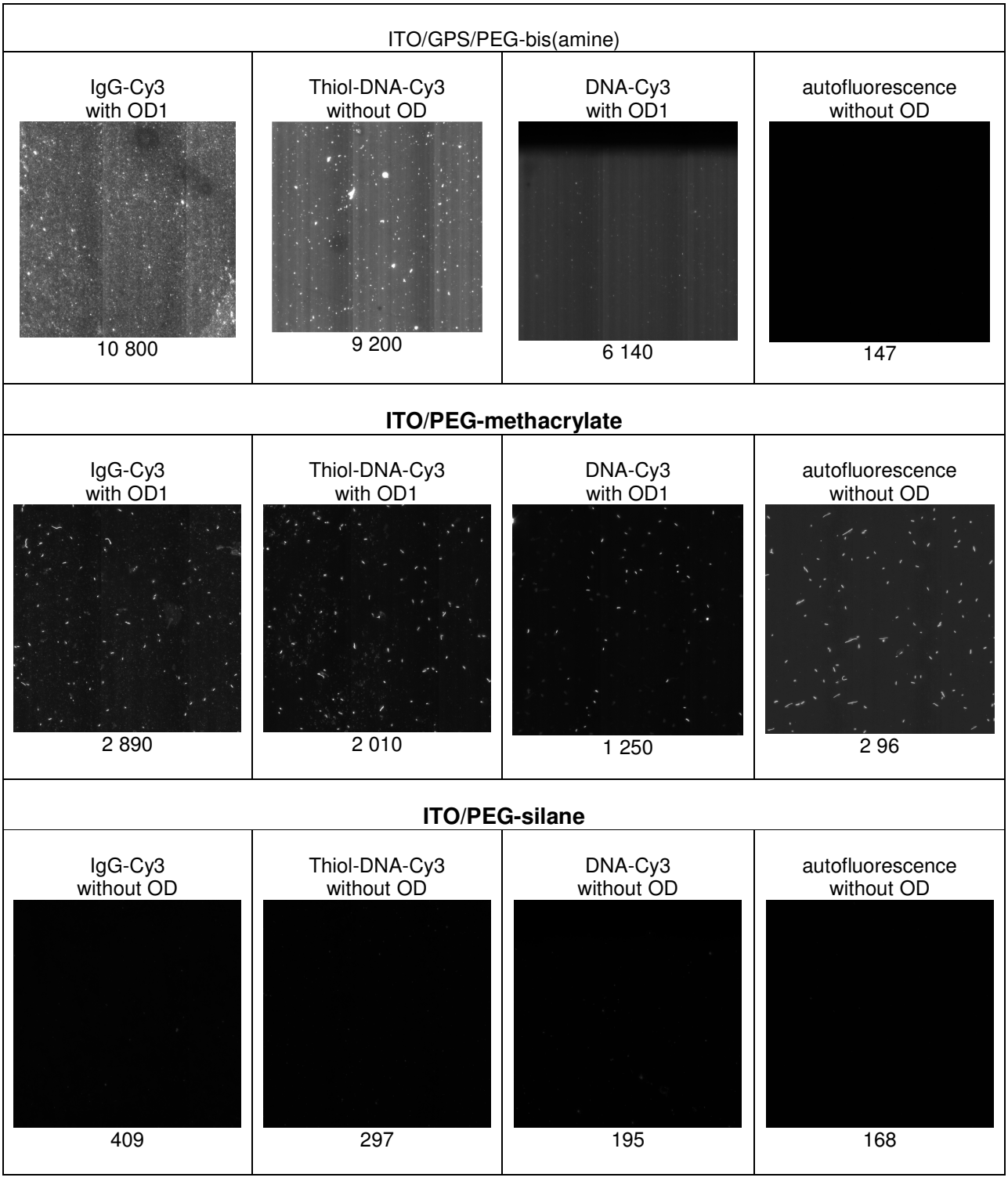

Figure S4-B. Fluorescence micrographs of PEG-functionalised surfaces treated with 1 μM IgG-Cy3, 1 μM Thiol-DNA-Cy3, and 1 μM DNA-Cy3. The micrographs show an area of 78 x 78 μm. The average fluorescence brightness is indicated at the bottom of each micrograph.