Supplementary Data

Table I. PPy thicknesses (Å) measured by mechanical profilometry and PPy:Au thickness ratios *m*.

Au = 500 Å		Au = 1000 Å		Au = 2000 Å		Au = 3000 Å	
PPy Thickness	**PPy:Au ratio**	**PPy Thickness**	**PPy:Au ratio**	**PPy Thickness**	**PPy:Au ratio**	**PPy Thickness**	**PPy:Au ratio**
506	1.01	2,446	2.45	2,300	1.15	6,782	2.26
1,617	3.23	3,065	3.07	6,700	3.35	10,099	3.37
2,952	5.90	5,668	5.67	9,949	4.97	16,182	5.39
5,904	11.81	7,639	7.64	17,909	8.95	31,424	10.47
3,975	7.95	9,057	9.06	30,150	15.08	47,504	15.83
5,453	10.91	10,261	10.26				
6,863	13.73	15,055	15.06				
9,824	19.65	19,165	19.17				
		20,235	20.24				

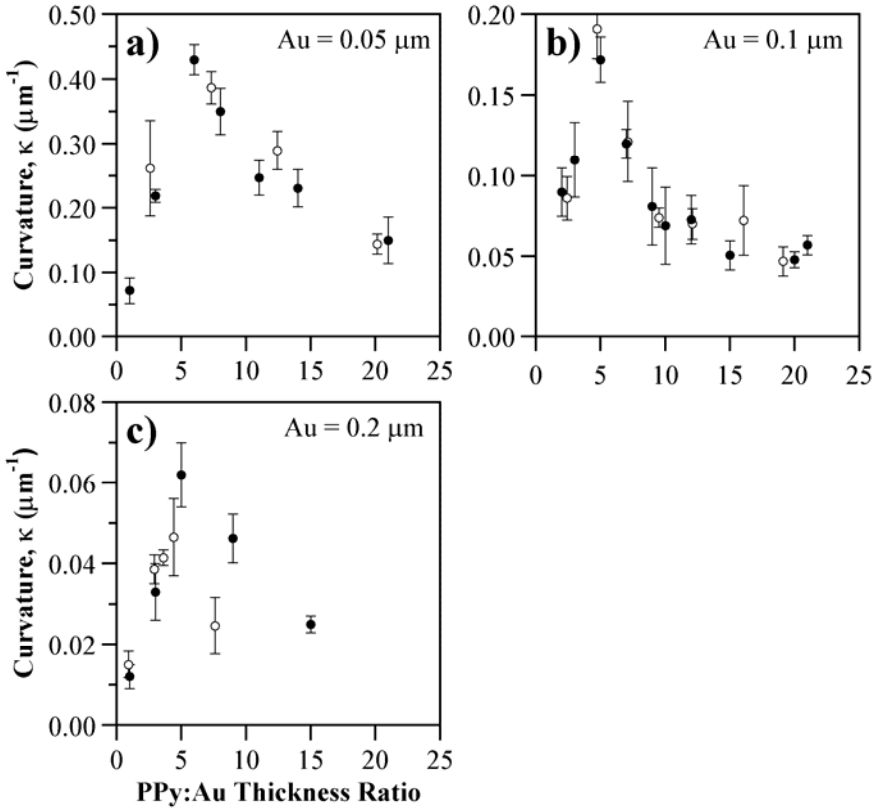

Figure 1. Curvature as a function of PPy:Au thickness ratio for three different Au thicknesses taken independently by two people. Data from one person are indicated by filled circles (same as in main paper), and from the other person by open circles.

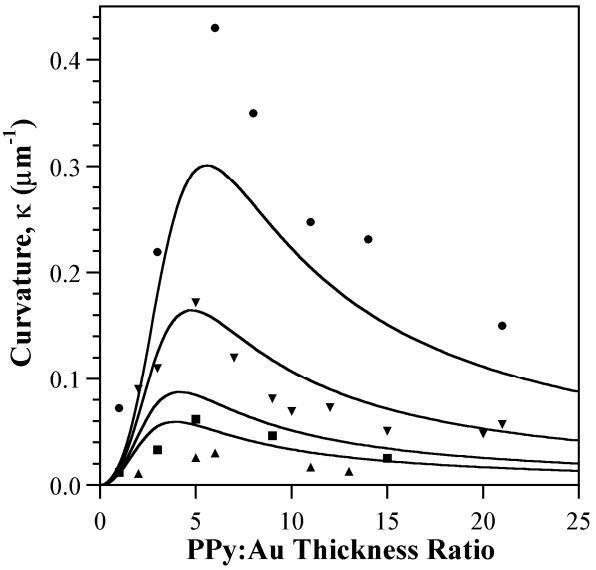

Figure 2. Comparison of data and model using a modulus variation of the form in equation 13 with constant strain α_0 = 7%, a = 5, c_1 = 40, E_0 = 0.02 GPa, and E_2 = 83 GPa. The curves cannot all be fit, no matter what parameters are chosen.

Figure 3 shows the strain in a PPy(DBS) film 2 μm thick using the parameters that best fit our data. The strain is shown as a function of distance from the PPy outer surface (not as a function of z, the distance from the metal surface, as in Figure 11 of the paper, but mirrored). To find the strain for thinner films, stop at a smaller distance. (For example, for a 1000 Å thick film the strain varies between 20% and 15% for a = 3.4.) For thicker films, the portion further than 2 μm from the PPy surface stays at 3% (the bulk value).

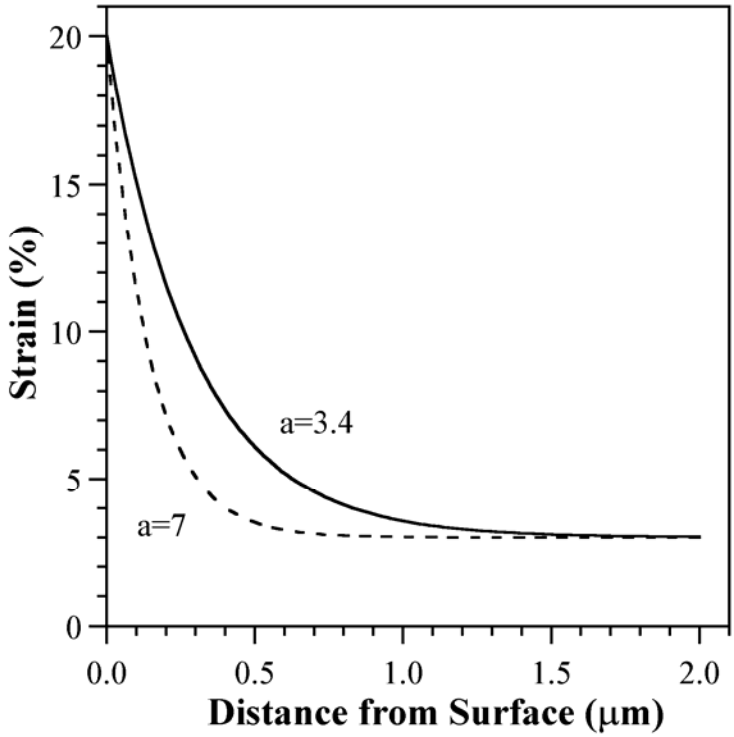

Figure 3. Strain dependence given by equation 13 as a function of distance from the outer PPy surface with α_b = 3%, α_o = 17%, and a = 3.4 or 7, the values used in Figure 16 of the paper.