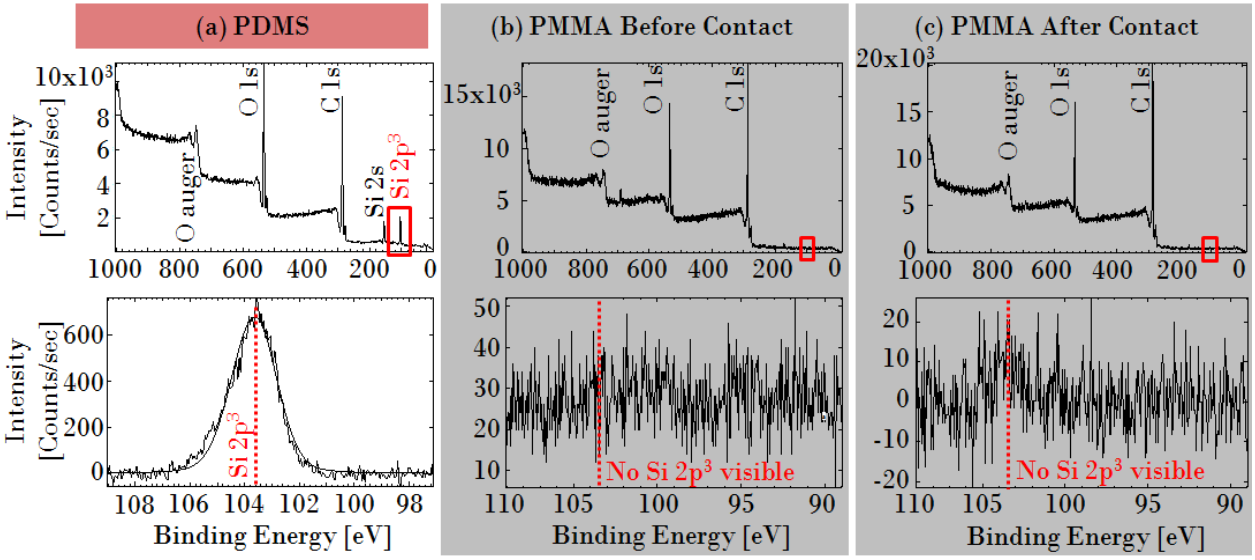
SUPPLEMENTAL INFORMATION

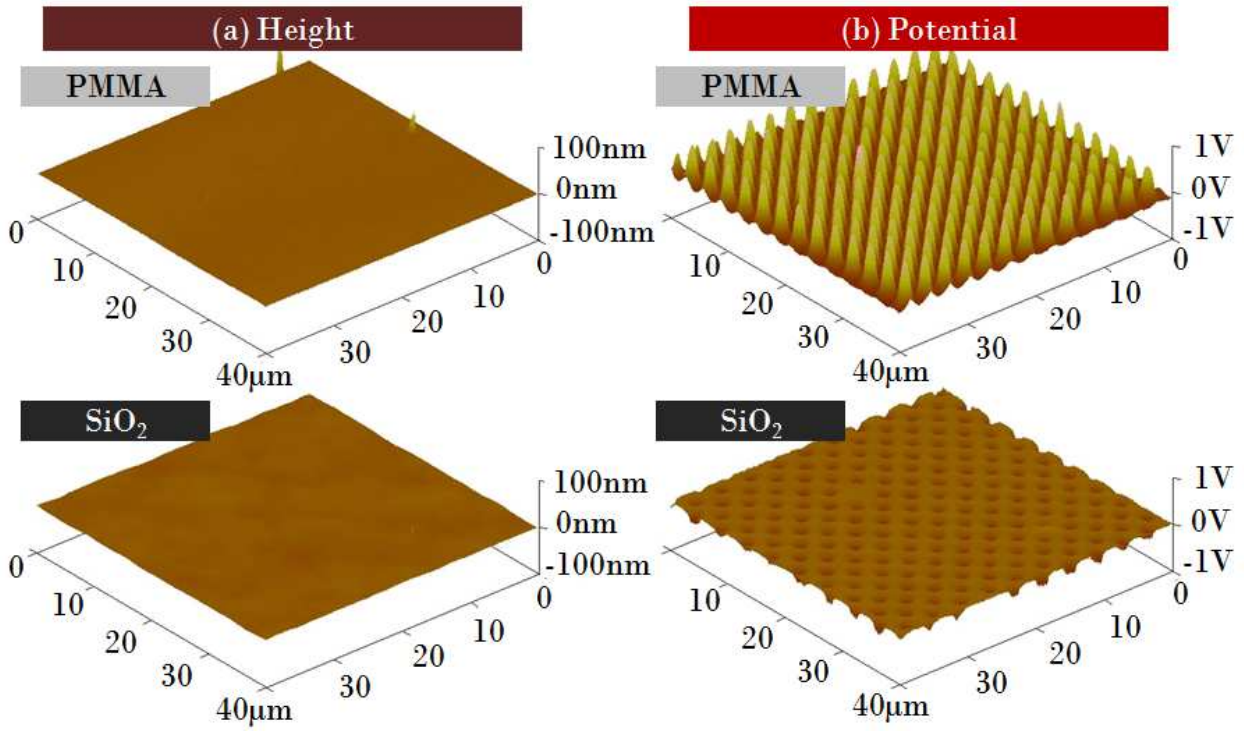


Supplemental Figure S1. *XPS study of material transfer from PDMS (a) to PMMA (b,c) by contact. Carbon and oxygen peaks are visible in each case, but only PDMS showed silicon peaks below 200eV. (Top row) The overall traces were narrowed (red boxes, top row) to determine peaks in the appropriate range (bottom row) for the binding energy range for Si. The silicon content of PDMS* $[C_2H_6OSi]_n$ *is measurable as a* $2p^3$ *peak at 103.4eV (red dotted line, bottom row). The plots show the lack of Si content on PMMA (b) before and (c) after contact with PDMS so it is concluded that no PDMS material transferred to the PMMA.*

The XPS studies of PDMS material transfer to PMMA by contact were performed by tracking Si content. Supplemental figure S1 depicts XPS data showing Si content on (a) the PDMS surface with greatest intensity at 103.4eV which corresponds to the Si $2p^3$ peak. Since PMMA (chemical formula $[C_5H_8O_2]_n$) contains no Si and PDMS (chemical formula $[C_2H_6OSi]_n$) does contain Si it is possible to use XPS to track material transfer. As a control sample Si was not detected (b) on the PMMA surface before contact. Following contact with oxygen plasma treated PDMS (c) the surface still did not show any Si-related peaks with the conclusion that no PDMS material transferred to the PMMA.

As shown in supplemental figure S2 (top row) the AFM traces (a) for PMMA contacted by PDMS show no topography which supports the lack of material transfer by contact even with levels of transferred charge near +1V as measured by KFM (b). For the case of SiO_2 we observed

material transfer to depend strongly on plasma parameters such that exposure to O_2 and N_2 containing air plasma for 1min or less reduced material transfer below AFM resolution limits as indicated in the supplemental figure S2 (bottom row). We found that higher plasma O_2 content and longer treatment times resulted in increased PDMS material transfer to the SiO_2 such that the amount of material was visible in AFM scans. These structures were not always charged and the PDMS stamps could not be used repeatedly. Best charging results in terms of repeatability and amount of charge transferred were achieved using a 10 Torr air based 20% oxygen plasma treatment (SPI Plasma Prep II) for 1 minute which allowed clean delamination and uniform charging as shown in the figure.



Supplemental Figure S2. *(a) AFM topography data with (b) corresponding KFM charge data for PMMA (top) and SiO_2 (bottom) after contact with PDMS. Lack of topography in both cases indicates minimal if any material transfer occurred during contact while the charge patterns are well resolved and opposite in polarity.*