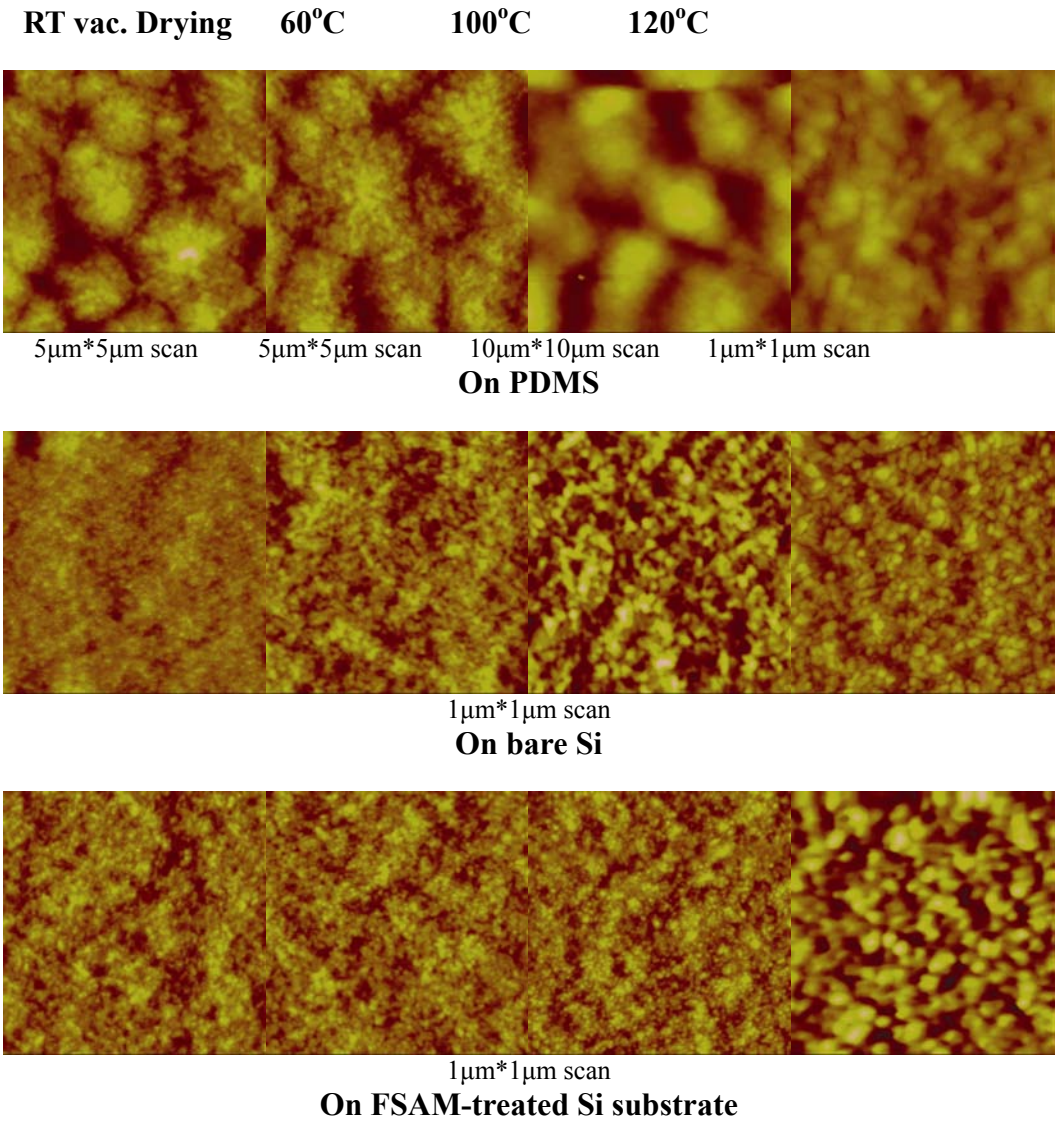
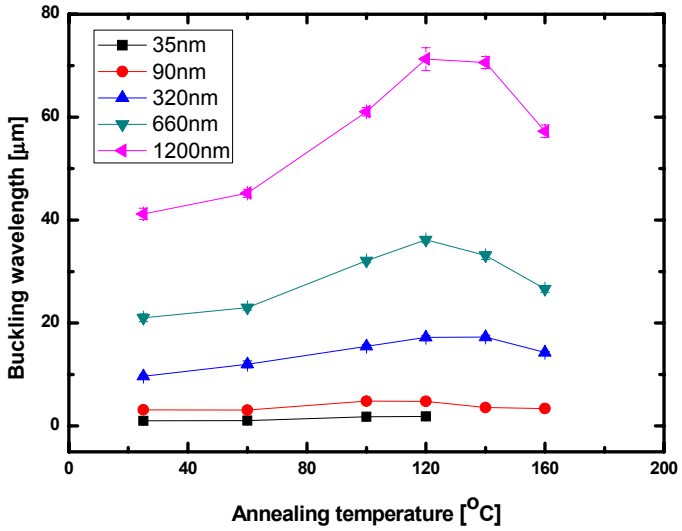
S1. Crystalline morphology of P(VDF-TrFE) thin films on various substrate at low temperatures.

P(VDF-TrFE) thin films (~90nm) were spun on bare Si, FSAM-treated Si, or PDMS, and then annealed at various temperatures, from room-temperature vacuum drying to 120°C in a convection oven for an hour. The crystallized film surfaces were investigated by AFM.

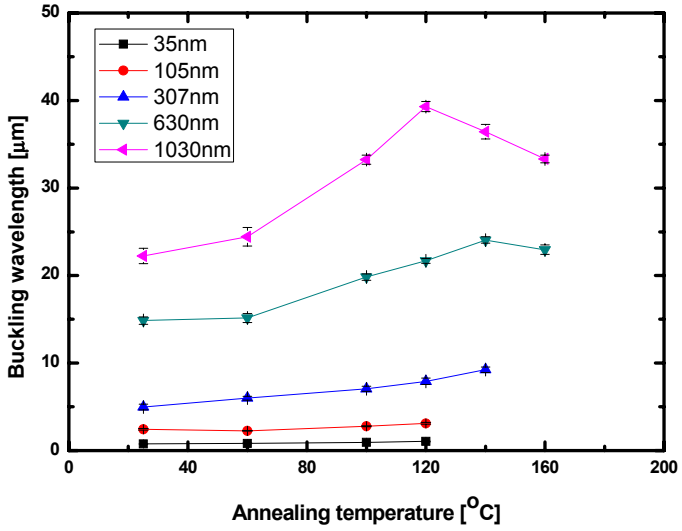


The images show that there are negligible differences in crystalline morphologies on different substrates. Note, however, that the crystallite size seems slightly larger on PDMS and FSAM-Si than that of on bare Si on 120°C annealed samples. The substrate dependence was found to be pronounced at higher crystallization temperatures, as shown in the main text.

S2. Buckling wavelengths of P(VDF-TrFE) thin films, prepared and annealed on FSAM-treated Si substrate (a) and on PDMS (b).



(a)



(b)

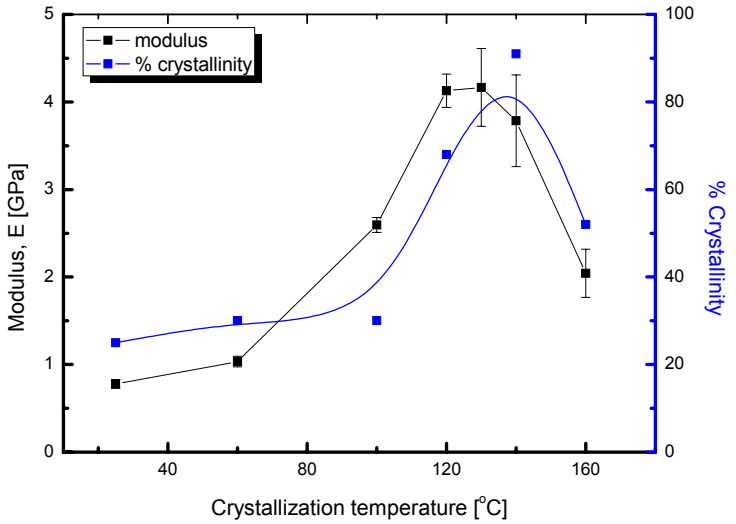
S3. Tabulated moduli values of P(VDF-TrFE) thin films, with % crystallinitydata from literatures.

Temp. [^{o}C]	E (on FSAM-Si) [GPa]	E (on PDMS) [GPa]	% cryst.[a]	% cryst.[b]
25	0.779 (±0.050)	0.697 (±0.037)	25	~30
60	1.034 (±0.061)	0.903 (±0.017)		~30 (@80^{o}C)
100	2.595 (±0.086)	2.171 (±0.104)		~30
120	4.128 (±0.189)	2.896 (±0.249)	68	~45
130	4.166 (±0.445)	-		
140	3.785 (±0.524)	3.144 (±0.318)	91	~75
160	2.041 (±0.275)	2.422 (±0.141)	52 (@155^{o}C)	

a)Data taken from ref. 24 (~550nm-thick film, annealed for 8 hrs).

b) Data read from ref.25 (~15μm-thick film, annealed for 2 hrs)

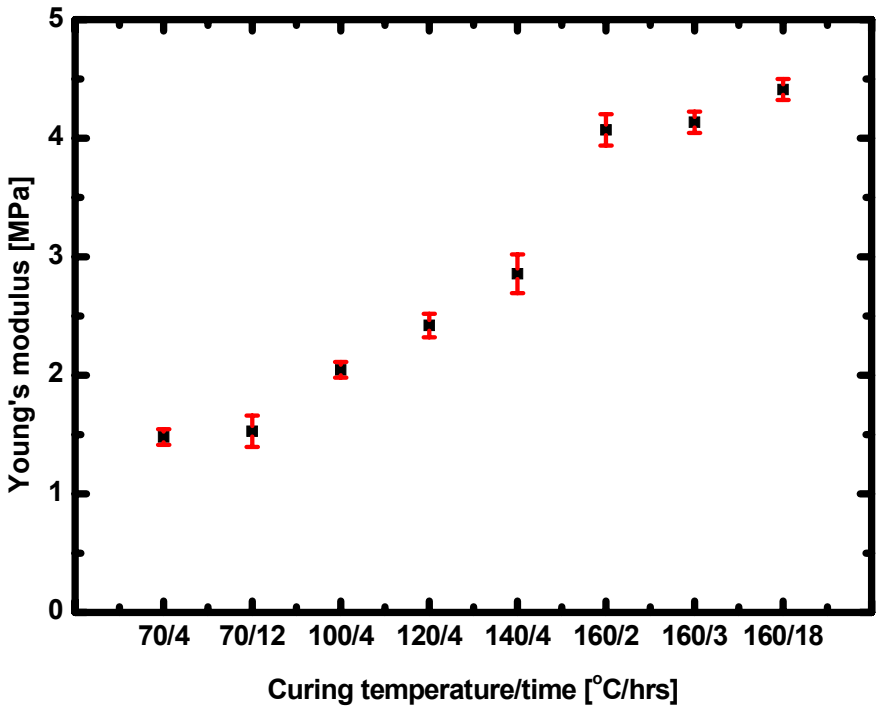
S4. Elastic moduli and % crystallinityof P(VDF-TrFE) thin films as a function of annealing/crystallization temperature.



- % crystallinity data were taken from references 24 and 25.

S5. Elastic moduli of PDMS as a function of curing temperature by micro-tensile test.

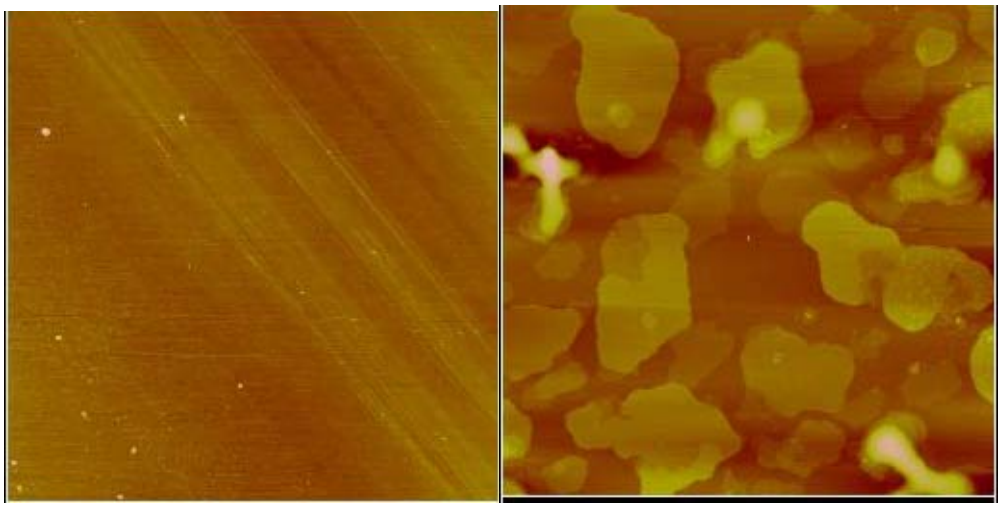
The Young's modulus of elastomer PDMS was measured by micro-tensile test. The PDMS slabs, cured at high temperatures from 70°C to 160°C for different time duration, were cut into dog-bone shape having dimensions of 15mm*1mm*0.49mm (length*width*thickness) for the test. The modulus increases from ~1.5 MPa (curing at 70°C) to ~4 MPa (cured at 160°C for >2 hrs). No further increase in modulus was found for 160°C-cured PDMS within experimental error, so PDMS slab cured at 160°C for 2 hrs was used for the crystallization experiments on PDMS.



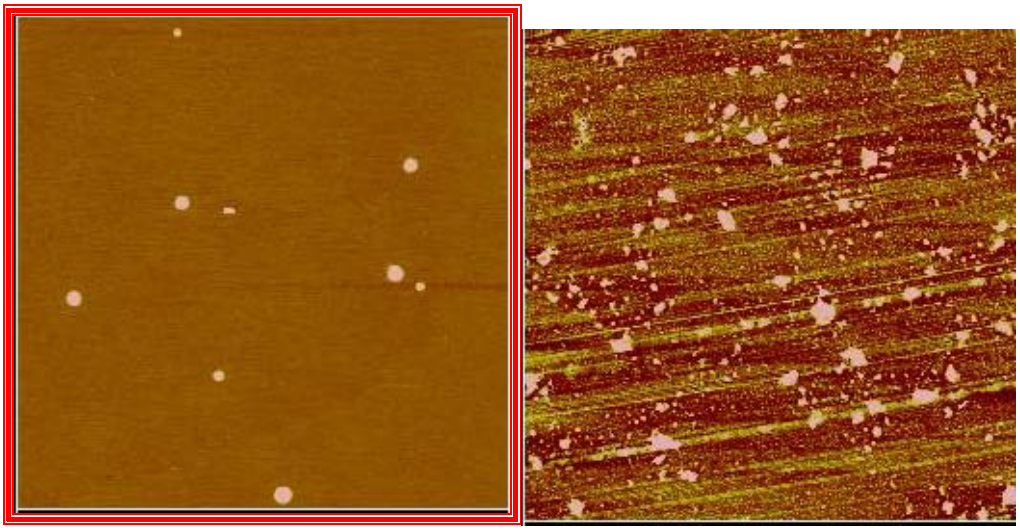
S6. Optimization of FSAM treatment on Si substrate.

FSAM-treatment on Si substrate was optimized in terms of surface smoothness and hydrophobicity (or, water contact angle). The various combination of treatment sequences were tried and characterized by AFM and water contact angle measurement.

1)Surface characterization results:



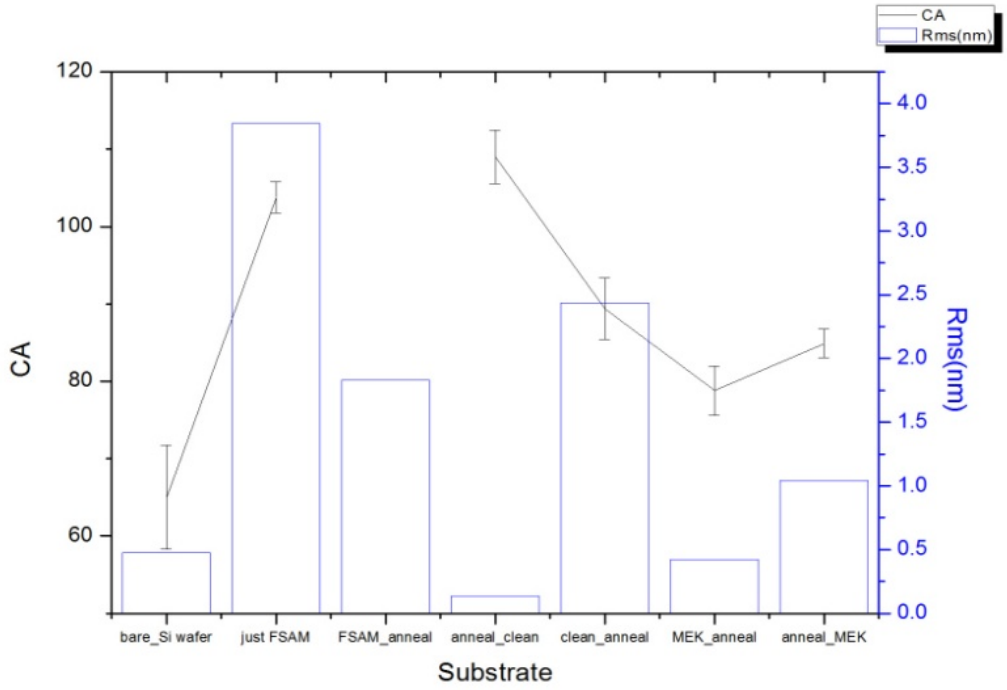
(a) Bare Si (b) Vapor-phase FSAM-treated Si
(RMS roughness: 0.473nm)(RMS roughness:3.845nm)



(c) Vapor-phase FSAM-treatment + anneal on hot plate(120°C) for 20min. + sonication for 10min.in acetone, ethanol and deionized water(RMS roughness: 0.137nm)

(d) Vapor-phase FSAM-treatment +sonication for 10min.in acetone, ethanol and deionized water + anneal on hot plate(120°C) for 20min. (RMS roughness: 2.439nm)

2) Water contact angle results:



Based on these results, the optimum FSAM-treatment process was found to be: vapor phase FSAM-treatment, followed by annealing at 120^{o}C on hot plate for 20min., and then ultrasonic cleaning in acetone/ethanol/DI water. The resulting surface showed very low (0.137nm) RMS roughness and high water contact angle (~110^{o}).