Electronic Supplementary Material (ESI) for RSC Advances.

Supporting information

Tunable surface topography in fluoropolymers using photo-embossing

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The storage and loss modulus of the fluoropolymers was measured using a TA instruments Q800 Dynamic Mechanical Analyser. Fluoropolymer films of different compositions were made in a PDMS mould of 30x8x1 mm. A temperature sweep between -140 and 150 °C was performed with a constant frequency of 0.2 Hz.

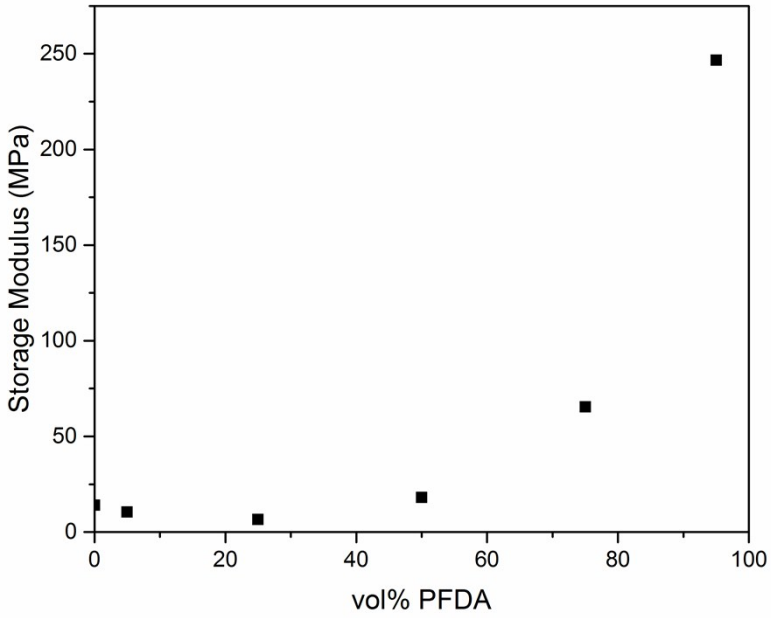

Figure S1: The storage modulus (E') of different monomer compositions was measured by DMTA at room temperature at a frequency of 0.2 Hz. It can be seen that the storage modulus ranges from 20 MPa to as high as 250 MPa when increasing the vol% of PFDA.

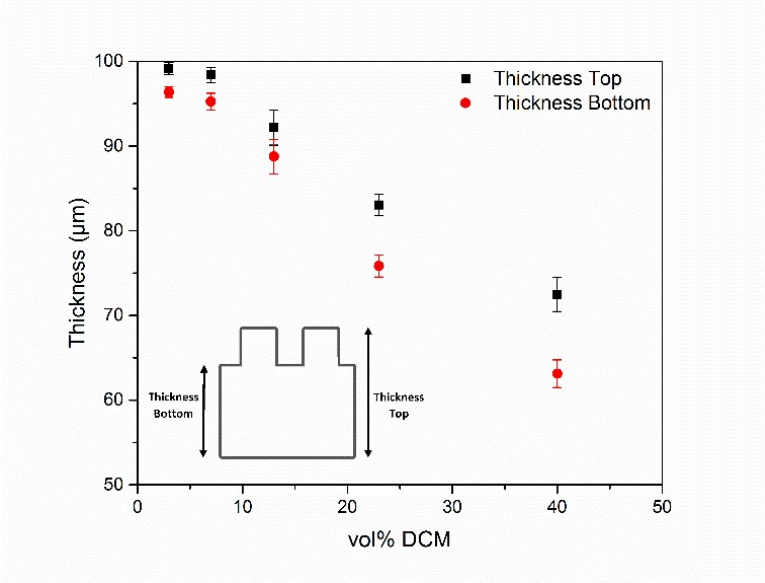

Figure S2: The thicknesses of the polymerised films with different volume percentages of DCM were measured. The decrease in thickness of the films corresponds to the decrease in volume of the monomer mixture that is present in the 100 µm thick cell.

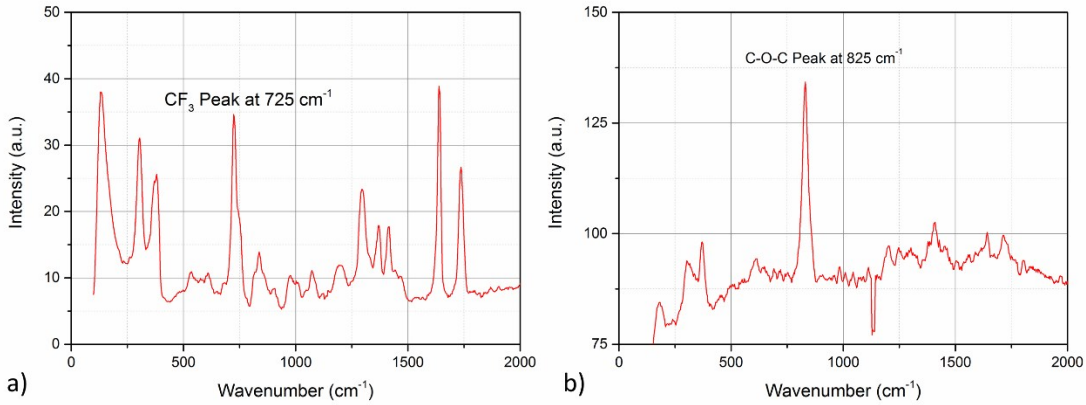

Figure S3: The Raman spectra for PFDA (a) and for MD40 (b). For PFDA the characteristic peak at 725 cm^{-1} from the CF_3 vibration is used. For MD40 the characteristic C-O-C peak at 825 cm^{-1} is used to determine its presence.

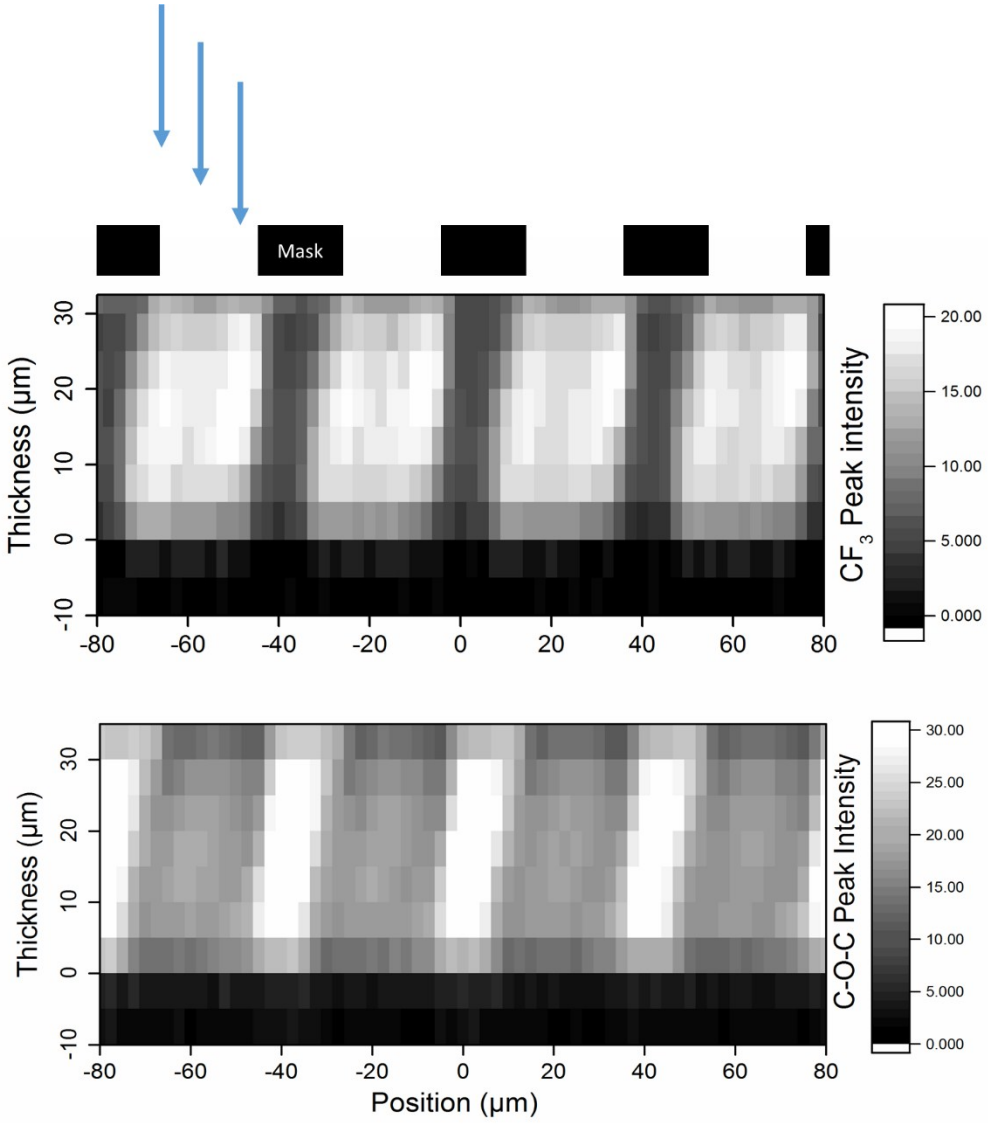

Figure S4: Raman spectra of the CF_3 peak at 725 cm^{-1} (top) and of the C-O-C peak at 825 cm^{-1} (bottom). It can be seen that the composition varies along the position of the sample (perpendicular to the photomask lines) and that the composition is constant throughout the thickness of the film. The black area on the bottom of the graphs is the glass substrate.