Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Oriented perylene incorporated optically anisotropic 2D silica films

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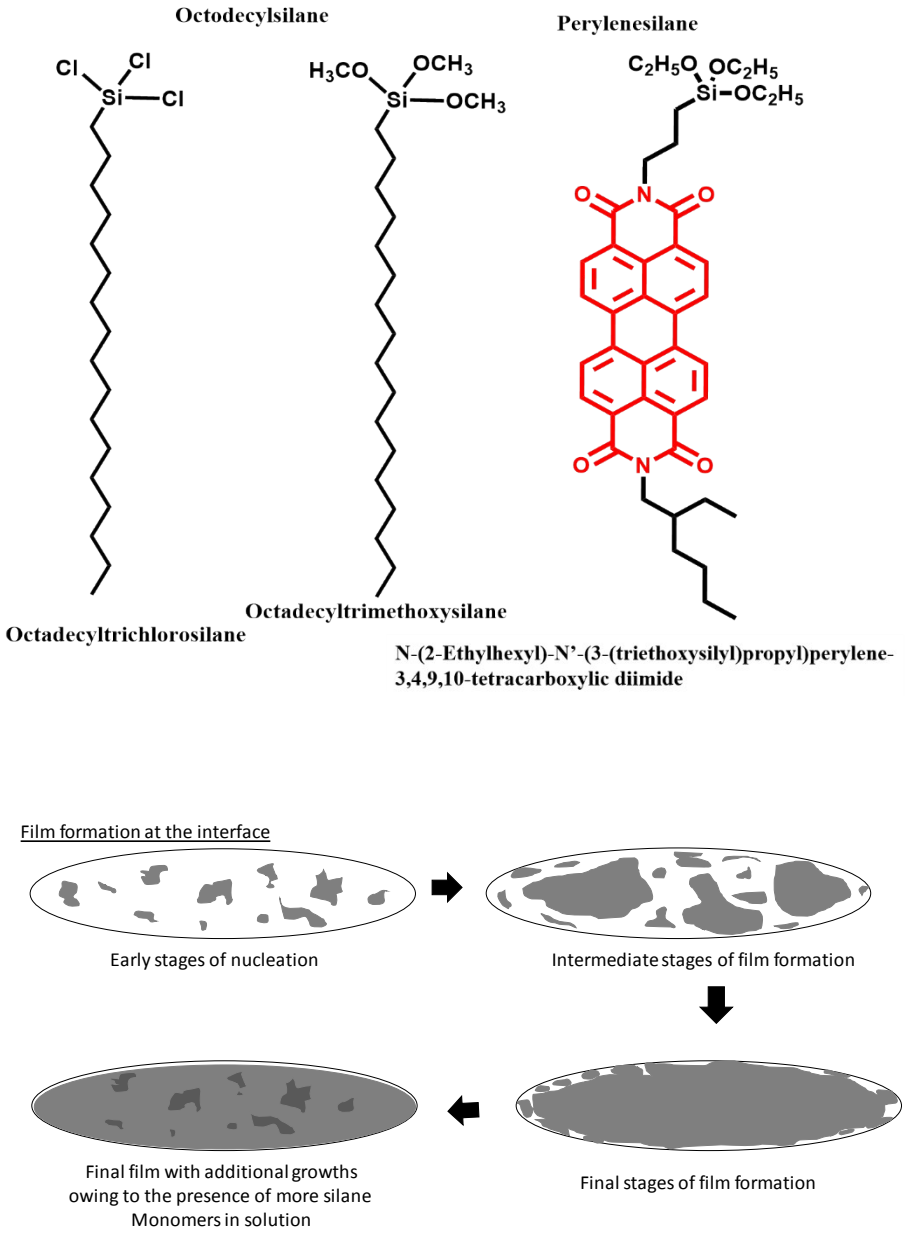

Fig. S1 Molecular structure of precursors used for preparing silica films and a cartoonistic representation of film formation at the interface.

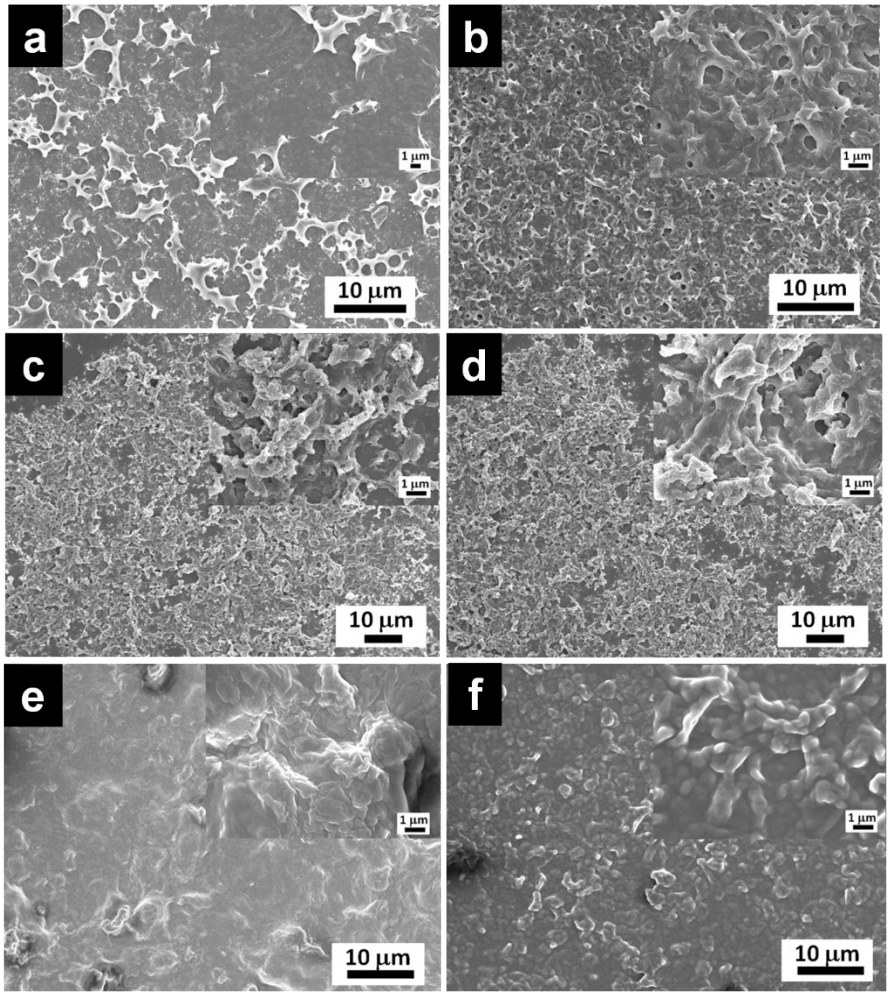

Fig. S2 FESEM micrographs of silica film obtained from (a) **O-Si**, (b) **P-Si** and combination of perylenesilane and octadecylsilane in mole ratios of 1: 1 (c, **PO_1-Si**), 1:10 (d, **PO_{10}-Si**), 1:100 (e, **PO_{100}-Si**) and 1:1000 (f, **PO_{1000}-Si**) on the organic side.

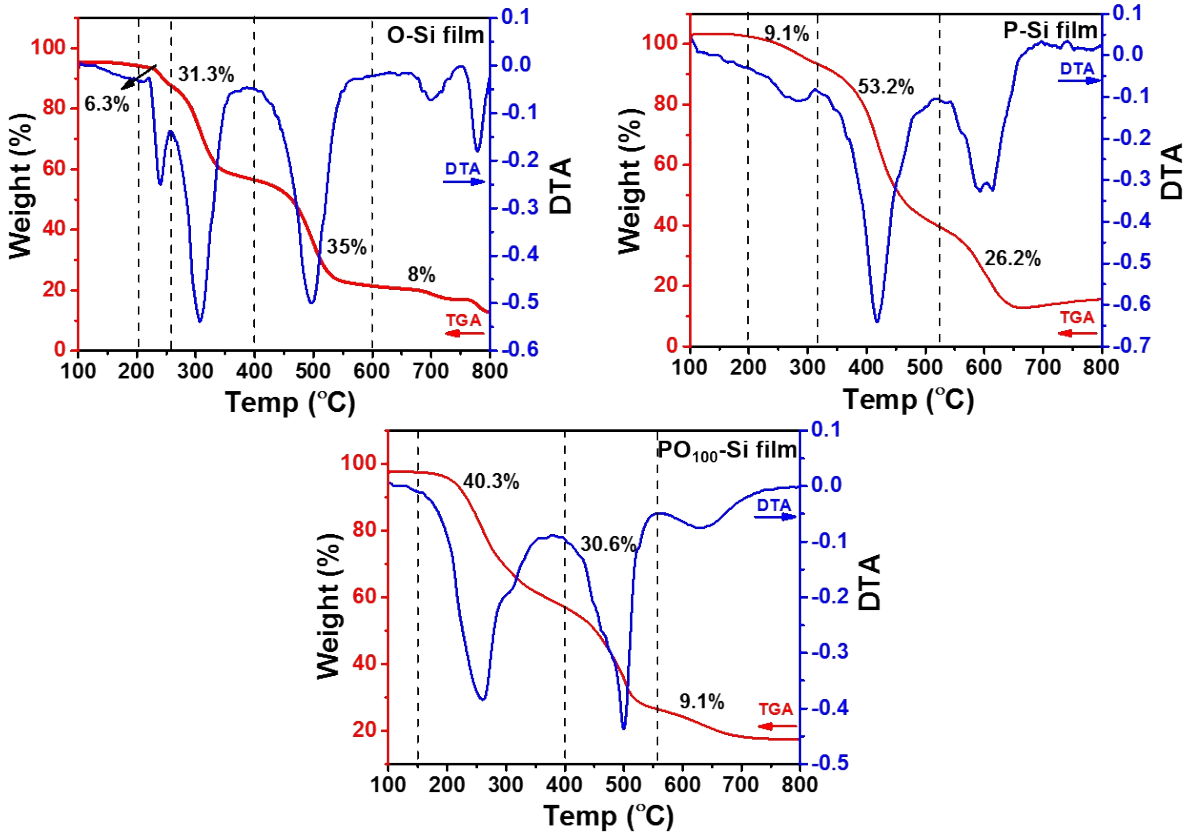

Fig. S3 TGA-DTA analysis of **O-Si**, **P-Si** film and **PO_{100}-Si** film using a heating rate of 10 ºC/min in air.

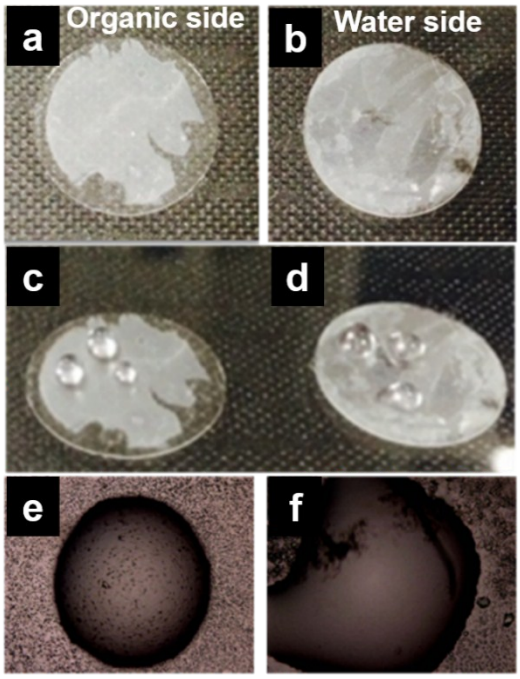

Fig. S4 Digital photograph of **O-Si** film surface collected on a glass substrate facing organic side (a), facing water side (b), water drop on the surface of the film facing organic (c) and water side (d) and corresponding image of water drop on the surface of the film facing organic (e) and water side (f) under optical microscope.

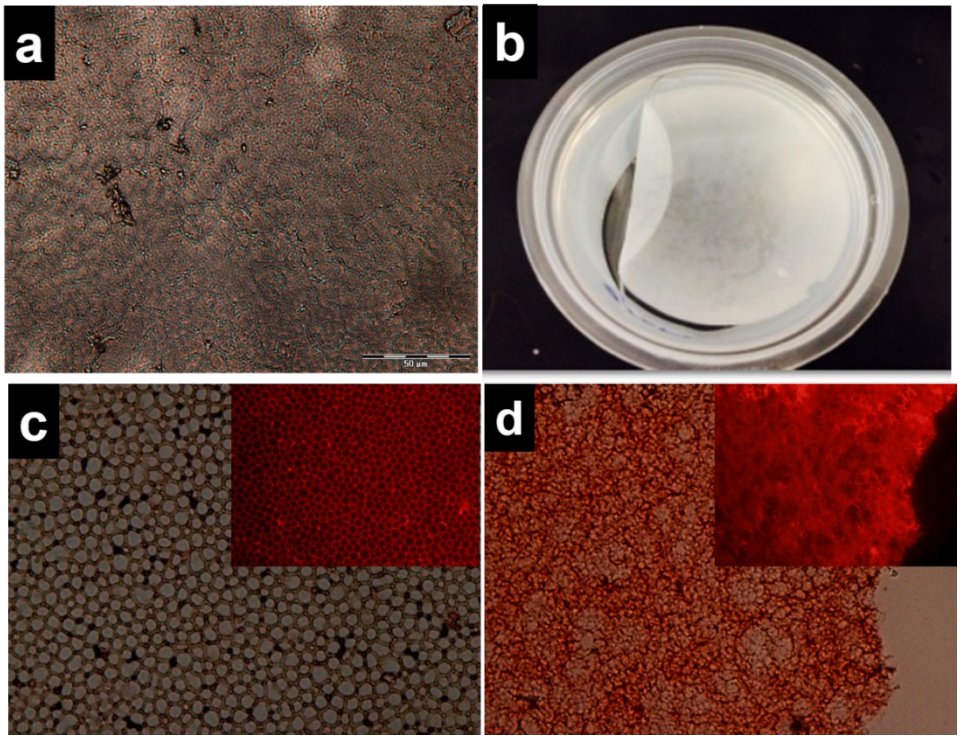

Fig. S5 Optical images of **O-Si** film collected on coverslip (**a**) and image of **O-Si** film formed at liquid/liquid interface (**b**). Optical images of drop casted perylenesilane film on coverslip **(c)**

and **P-Si** film formed at the interface of two liquids **(d)**. (inset: corresponding fluorescent images under FITC filter)

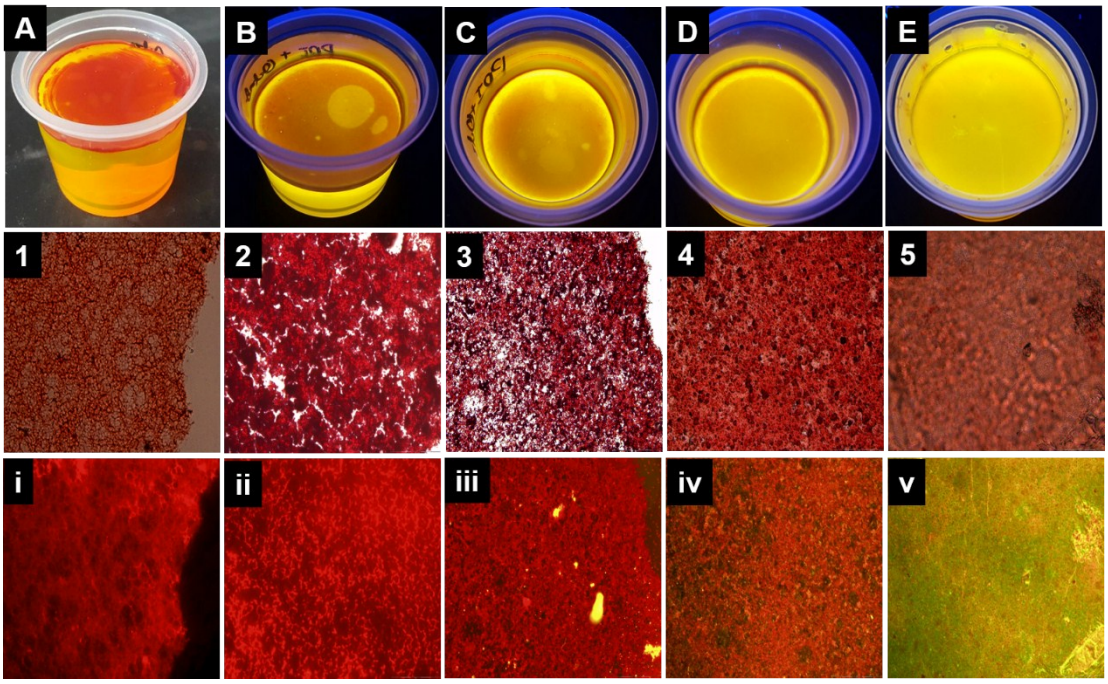

Fig. S6 Images of films formation at the interface of two immiscible liquids (A) **P-Si** under normal light, (B) **PO_1-Si**, (C) **PO_{10}-Si**, (D) **PO_{100}-Si** and (E) **PO_{1000}-Si** when exposed to UV lamp (λ = 360 nm), to show the effect of increase in concentration of Octadecylsilane on photophysical properties of the film formed at the interface. Optical micrographs of the films collected on coverslip in bright field mode (1) **P-Si**, (2) **PO_1-Si**, (3) **PO_{10}-Si**, (4) **PO_{100}-Si** and (5) **PO_{1000}-Si**. Fluorescent optical micrographs of the films under FITC mode (i) **P-Si**, (ii) **PO_1-Si**, (iii) **PO_{10}-Si**, (iv) **PO_{100}-Si** and (v) **PO_{1000}-Si**.