Figure S1. AFM images of (a) ~43 nm thick PMMA, (b) ~60 nm thick PVP, (c) ~32 nm thick C₄F₈ grown on Si (100) revealing their surface morphology, inset of (a): AFM height profile across the pin hole observed in Fig. S1(a).
Elemental composition and chemical bonding states of plasma polymerized C$_4$F$_8$ layer deposited on Si(100) were investigated by XPS. The spectrum of XPS survey scan and high resolution scans of fluorine and carbon are presented in Fig. S2. Survey scan (Fig. S2a) revealed the presence of F 1s, C 1s, and O 1s peaks having relative atomic concentrations of 54.51 %, 43.91 %, and 1.57 %, respectively. The fluorine to carbon ration (F/C) is found to be 1.24. Chemical bonding states in the polymer film were studied by the evaluation of F 1s and C 1s HR-XPS scans and are presented in Fig. S2 (b) and (c). HR-XPS scan of
F 1s spectrum shows a single symmetric peak at 689.73 which corresponds to C-F covalent bond. HR-XPS scan of C 1s shows various bonding schemes which are assigned to different chemical states (Fig. S2c). C 1s HR-XPS spectra has been deconvoluted into four sub peaks, which are assigned to C-CF (288.50 eV), CF (290.77 eV), CF$_2$ (292.80 eV), and CF$_3$ (294.60 eV) components.$^1$

References: