Supporting Information (SI)

Direct Synthesis of Porous Polyurea Films by Vapor Deposition Polymerization in Ionic Liquid

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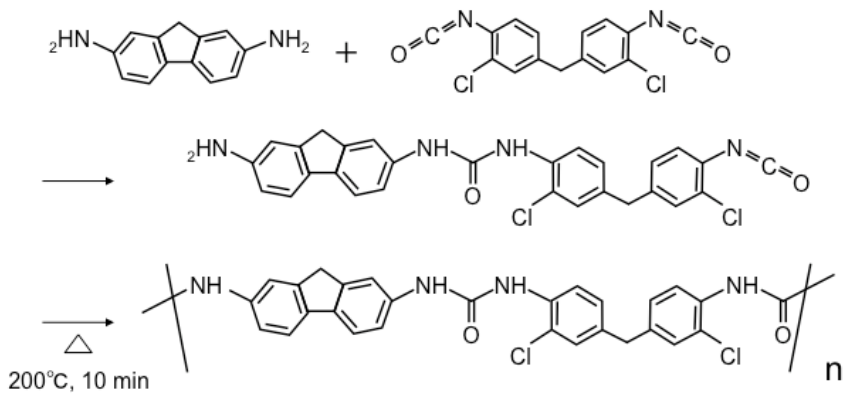
The supporting Information includes one scheme, one Table and four Figures.



Scheme S1: Reaction of DAF and MBCI into PU.

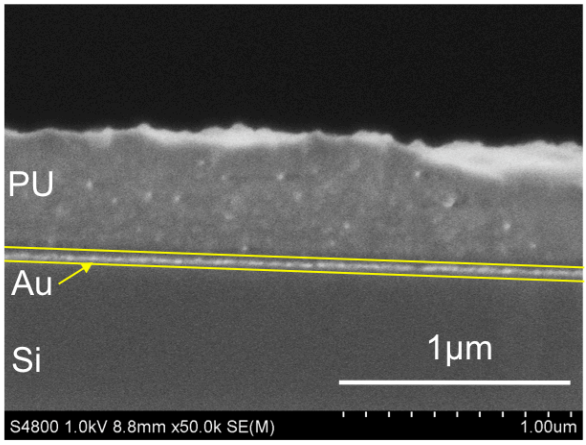


Figure S1: A cross-sectional SEM image of the porous film, whose thickness was determined to be about 530nm, thicker than the nominal thickness of 360nm due to the porosification, giving a volume fraction of voids to be 0.32.

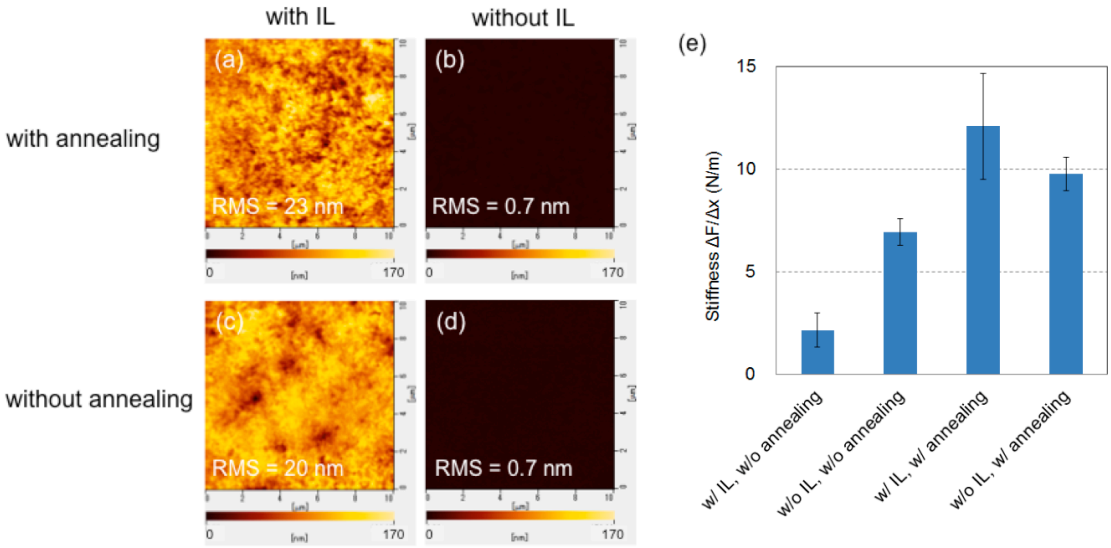


Figure S2: The average values of stiffness $\Delta F/\Delta X$ (N/m) for each polyurea film, calculated from AFM force curves taken at 10 points randomly selected from the scan area (10μmx10μm) are shown (e), together with the corresponding AFM images (a)-(d).

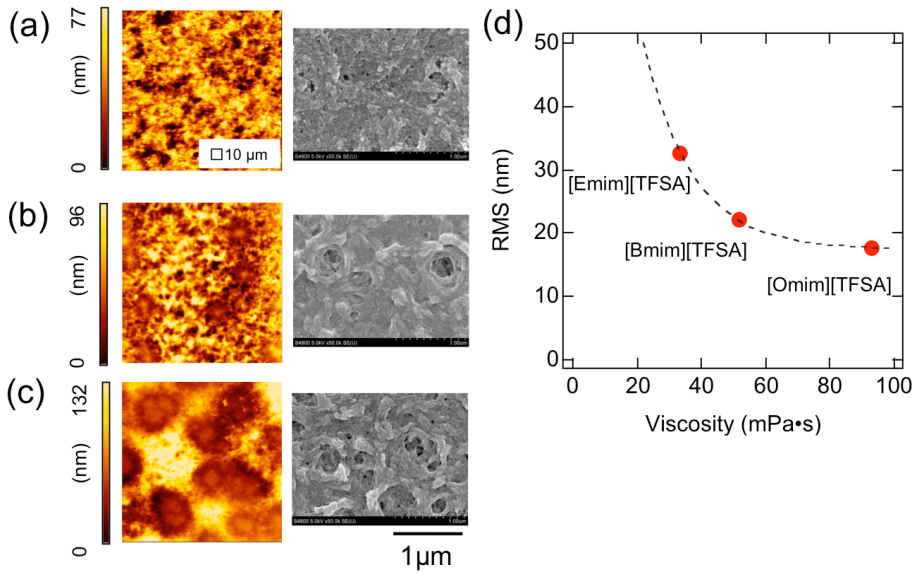


Figure S3: Network structures of polyurea films fabricated with three ILs with different viscosities of (a) [Omim][TFSA], (b) [Bmim][TFSA] and (c) [Emim][TFSA]. (d) The pore size (RMS roughness value) increases with a decrease of the viscosity of the IL.

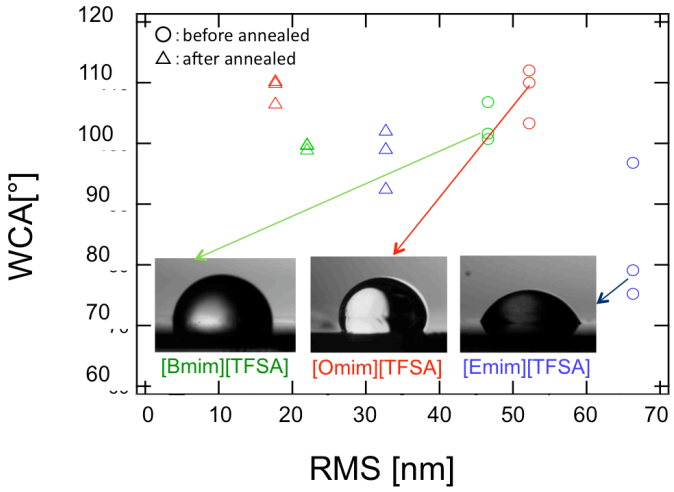


Figure S4: The plots of the CAs against the RMS values for various PU films prepared with different ILs.

Table S1

Ionic liquid	WCA [degree]	
	After annealed	Before annealed
[Omim][TFSA]	108.8	108.5
[Bmim][TFSA]	99.4	103.0
[Emim][TFSA]	97.8	83.7