Figure S1. (a) Thermogravimetric Analysis (TGA) data of TFI-IL. (b) Temperature-dependent modulus data of TFI-IL.
**Figure S2.** Photographic image of the highly concentrated TFI-IL-Au$_{\text{NPs}}$ (60 wt%) fluid. The Au$_{\text{NP}}$ fluid was phase-transferred to TOABr-Au$_{\text{NPs}}$ dispersed in toluene.
Figure S3. TGA data of each TFI-IL-AgNP according to different ratio of TFI-IL: AgNPs = (a) 1:0.25, (b) 1:0.5, (c) 1:1 and (d) 1:2, respectively.
Figure S4. Effect of elastic ($G'$) and viscous ($G''$) moduli of each TFI-IL-Ag with the different contents of AgNPs on the temperature at fixed angular frequency ($\omega = 1 \text{ s}^{-1}$) and strain amplitude ($\gamma = 10\%$); (a) 21 wt%, (b) 32 wt%, (c) 48 wt% and (d) 63 wt%, respectively.
Figure S5. HR-TEM images of TFI-IL-CdSe@ZnS with (a) red, (b) green and (c) blue emission, respectively.
Figure S6. (a) Shear stress curve of 32 wt% TFI-IL-QD as a function of shear rate. (b) Shear viscosity data of TFI-IL-QDs as a function of shear rate. Inset image of (b) shows the shear viscosity of TFI-IL-QDs measured at shear rate of 10 s⁻¹.
**Figure S7.** The data of QCM measurement for TFI-IL-QD/PSS, CA-QD/PSS and poly(allylamine hydrochloride/MAA-QD multilayer films.
Figure S8. PL spectrum and photographic image for TFI-IL-QD multilayer films. Blue, green, and red emissive multilayer-coated glasses were overlapped for white color emission.