Supporting Information

Supporting Information for the manuscript:

Enduring liquid repellency through slippery ionic liquid-infused organogels

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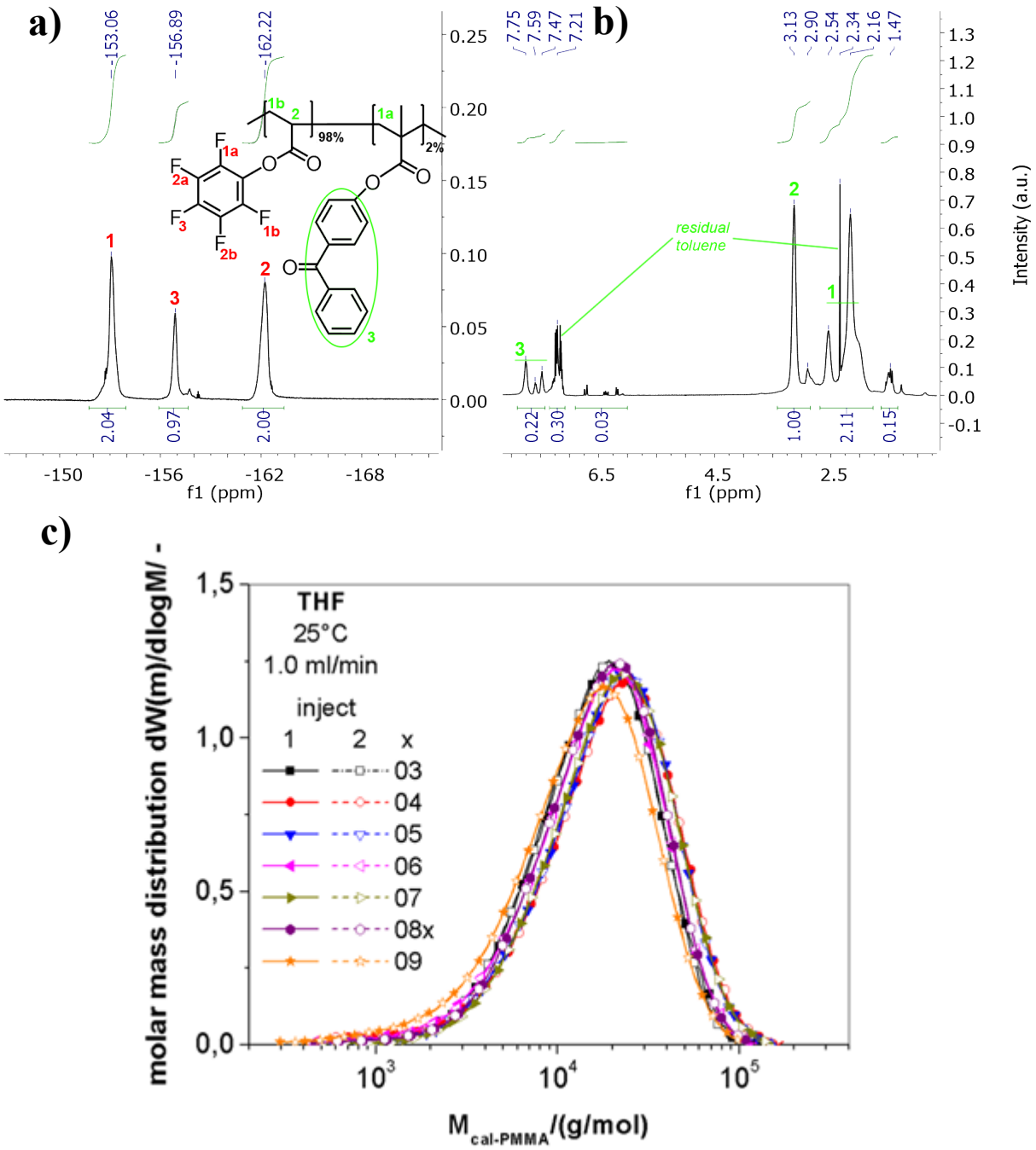
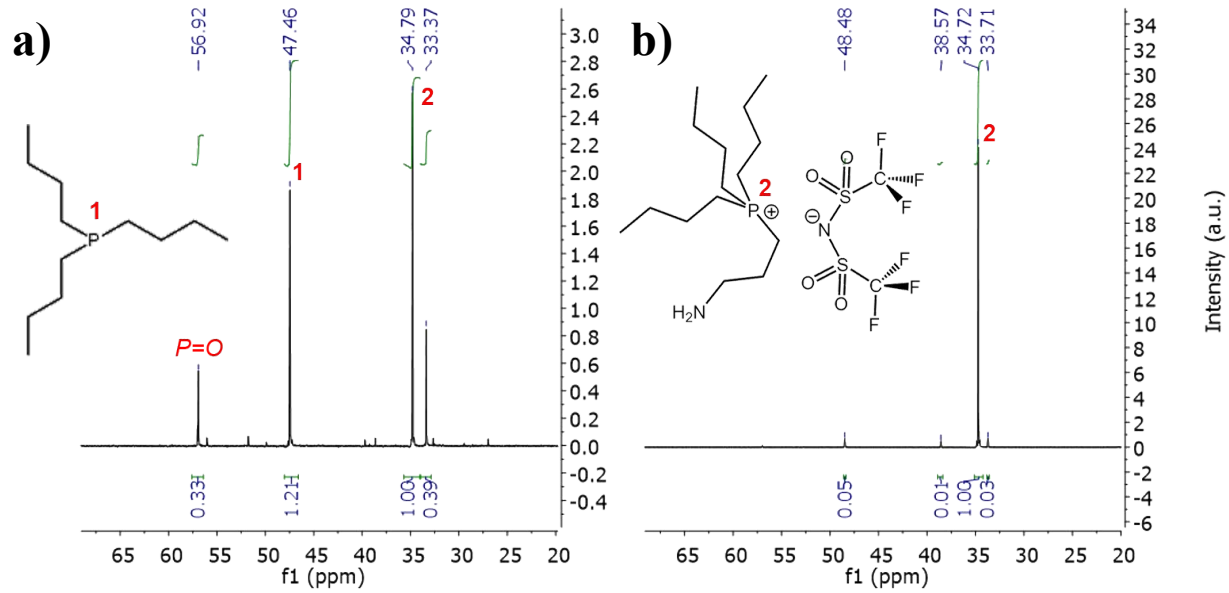
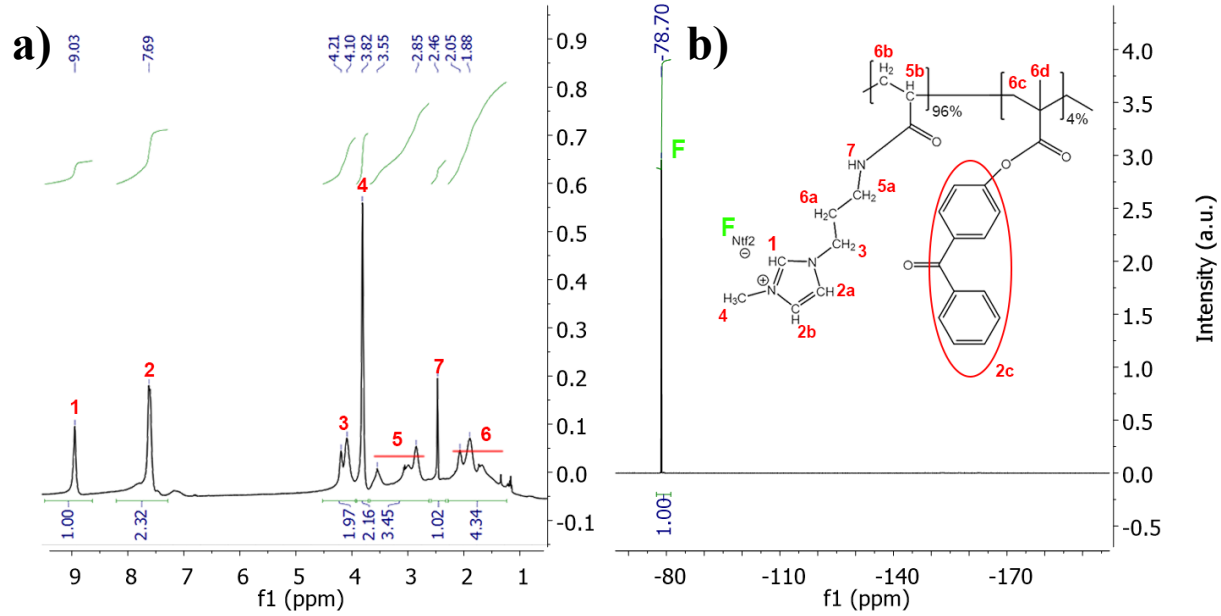


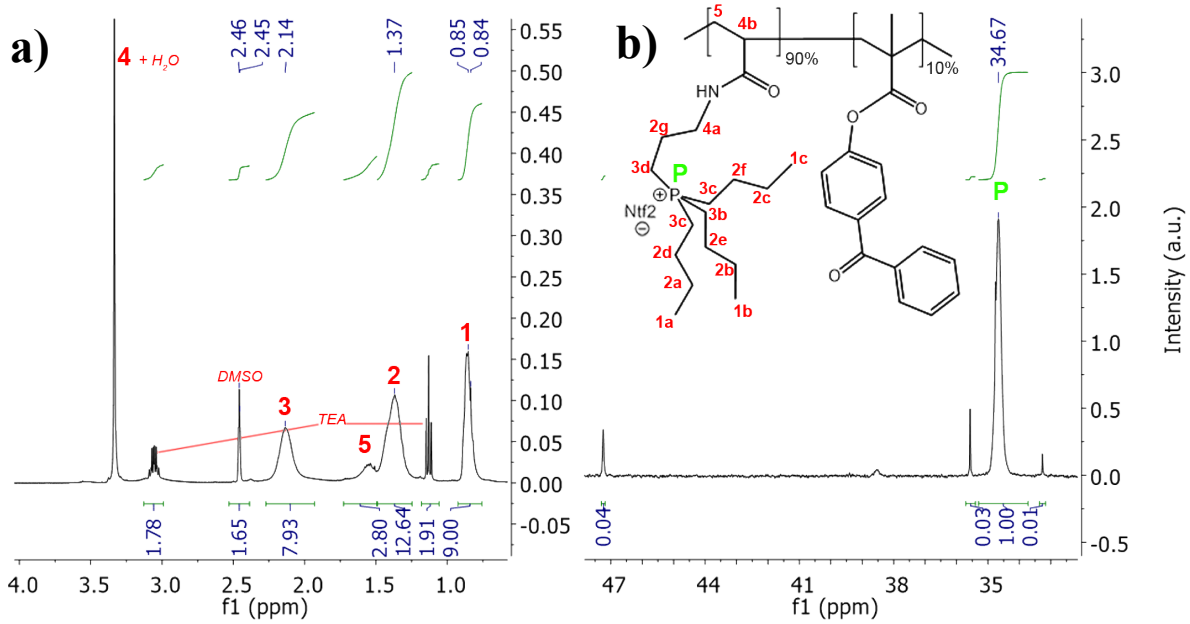
Supplementary Figure 1: NMR spectra a) 19F-, b) 1H and c) GPC data (M_w) of different synthesized poly(pentafluorophenyl acrylate) polymer batches used in the study.



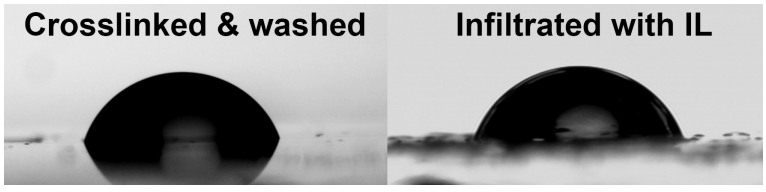
Supplementary Figure 2: Synthesis of the ionic liquid aminopropyl tributylposphosphonium bis(trifluoromethylsulfonyl)imide [APTBP][NTf2] by alkylation of tributylphosphine with 3-Chloropropylamine HCl (Details in Experimental Section), followed by ^{31}P-NMR. a) After 1.5 days of the alkylation reaction, significant amounts of the tributylphosphine starting material is still present in the mixture. b) after 8 days of reaction & ion exchange with Li[Ntf2], only peaks assigned to the IL product are observed.



Supplementary Figure 3: NMR Spectra of imidazole-based polymer [APMIM][Ntf2] a) ^{1}H and b) ^{19}F

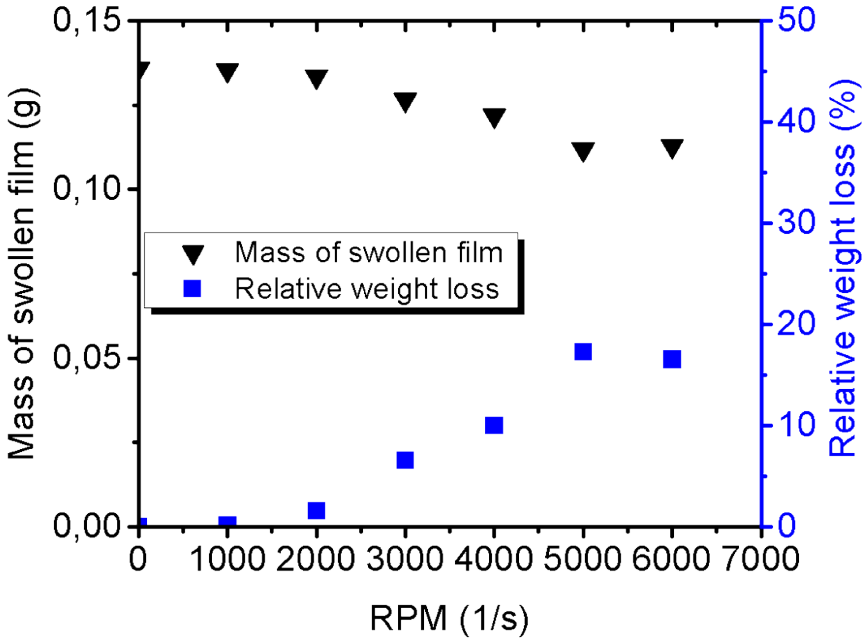


Supplementary Figure 4: NMR spectra of phosphonium-based polymer [APTBP][Ntf2] a) ^{1}H and b) ^{31}P



Phosphonium system	Contact angle (°)
Crosslinked & washed	67,2 ± 1,9
Swollen	68,9 ± 2,0
Imidazole system	Contact angle (°)
Crosslinked & washed	66,2 ± 4,6
Swollen	30,0 ± 3,9

Supplementary Figure 5: Pictures of a water droplet on the phosphonium-based organogel system and water contact angles of the two different ionic liquid-infused organogel coatings at the different preparation steps.



Supplementary Figure 6: Weight loss of the ionic liquid-infused organogel coating upon exposure to high shear forces in a spin coater. The phosphonium-based organogel infused with tributylposphosphonium bis(trifluoromethylsulfonyl)imide [APTBP][NTf2] ionic liquid as lubricant was exposed to sequential spin coating steps at different spinning speeds for 30s each. After each step, the mass loss was determined gravimetrically. As can be seen in the data, following an initial weight loss – presumably due to unbound ionic liqud, no further mass loss was detected for the experimentally accessable range.