

Supplementary materials

1-butyl-3-imidazolium bis(trifluorosulfonyl)imide ($C_1C_4imTf_2N$) was purchased from Solvionic (purity: 99.5%, Verniolle, France) and dried prior to use according to a published procedure.³⁵

0.5 mL of the IL phase was contacted with 0.5 mL of an aqueous phase of variable nitric acid concentration. Both phases were contacted in a mechanical shaker at room temperature ($293K \pm 1$) for three hours followed by 2 min centrifugation. The concentration of Tf_2N^- (see figure below) in the aqueous phase was measured using ^{19}F NMR (Bruker, 300 MHz) by mixing an appropriate volume of the sample with 100 μ L of an internal standard consisting of 50mM CF_3COONa in D_2O . The concentration of Tf_2N^- was obtained from the area ratio of the ^{19}F NMR signal of Tf_2N^- ($\delta_F = -80$ ppm; $CFCl_3$) to the $-CF_3$ peak of trifluoroacetate ($\delta_F = -76.5$ ppm; $CFCl_3$).¹⁴

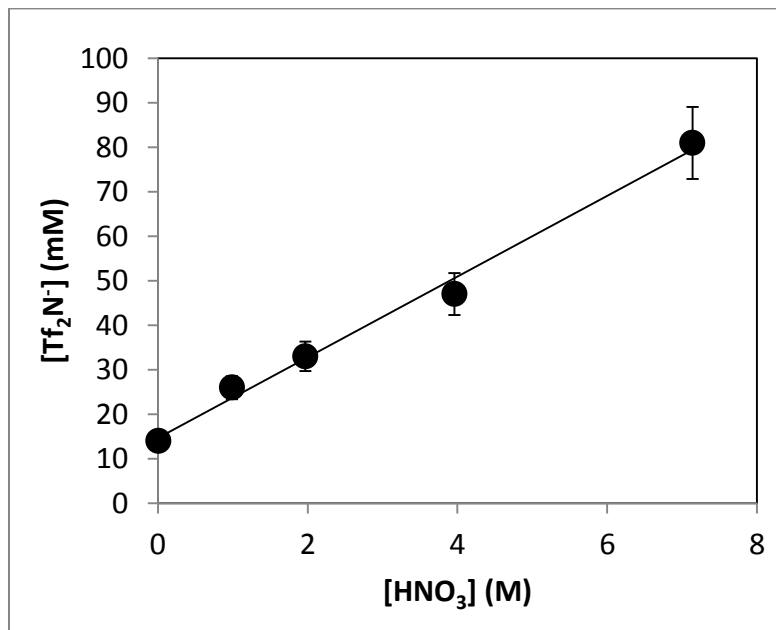


Fig. S1 : Variation of $[Tf_2N^-]$ as a function of $[HNO_3]$. Solide line : linear fit.

Linear fit of the data:

$$[Tf_2N^-] = 9.1 \times 10^{-3} (\pm 0.3 \times 10^{-3}) [HNO_3]_{init} + 1.5 \times 10^{-3} (\pm 0.1 \times 10^{-3})$$
$$\chi^2 = 0.931$$