

Organic phase stabilization of rhodium nanoparticle catalyst by direct phase transfer from aqueous solution to room temperature ionic liquid based on surfactant counter anion exchange.

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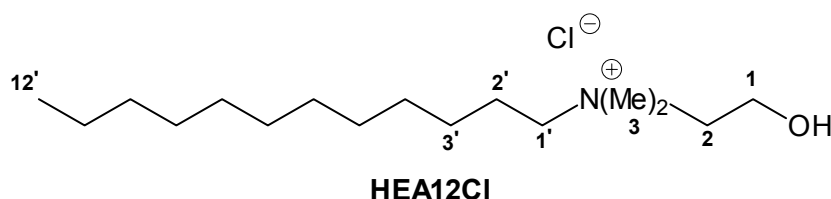
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Supplementary data

General

¹H (400 MHz), ¹³C (100MHz), ¹⁹F (36.5MHz) NMR spectra were recorded on a Bruker ARX400 spectrometer with complete proton decoupling for nucleus other than ¹H. Data are reported as follows: chemical shift (δ) in ppm, multiplicity (s= singlet, d=doublet, t=triplet, m=multiplet), coupling constants (Hz) and integration.

N,N-dimethyl-*N*-dodecyl-*N*-(2-hydroxyethyl)ammonium chloride salt HEA12Cl



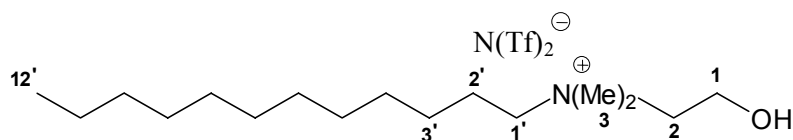
M = 293,92 g.mol⁻¹ ; C₁₆H₃₆ClNO

Yield (%) = 88 ; **R_f** (MeOH) = 0,1 ; **F** (°C) = 202-204

¹H NMR (400 MHz, CDCl₃): δ (ppm): 0.82 (t, *J* = 7 Hz, 3H); 1.20 (m, 16H,); 1.28 (m, 2H,); 1.69 (m, 2H,); 3.32 (s, 6H,); 3.49 (m, 2H,); 3.66 (m, 2H,); 4.04 (m, 2H,); 5.8 (m, 1H, OH).

¹³C NMR (100 MHz, CDCl₃): δ (ppm): 14.1 (1C); 22.7-31.9 (10C); 51.9 (2C); 55.9 (1C); 65.6 C(1C); 65.9 (1C).

***N,N*-dimethyl-*N*-dodecyl-*N*-(2-hydroxyethyl)ammonium trifluoromethanesulfonimide salt HEA12N(Tf)₂**



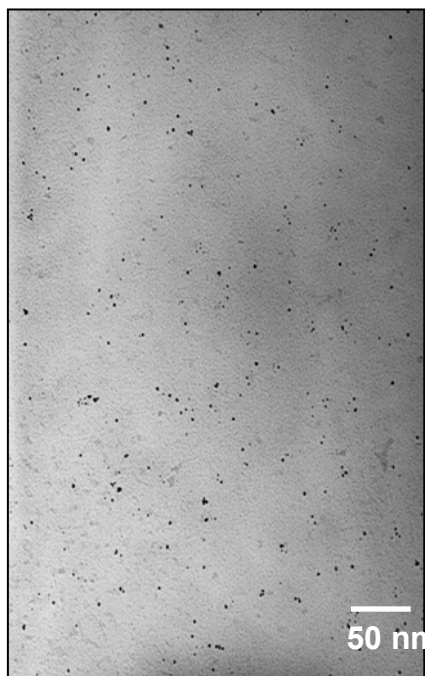
HEA12N(Tf)₂

¹H NMR (400 MHz, CDCl₃): δ (ppm): 0.82 (t, J = 7 Hz, 3H, H_{12'}); 1.20 (m, 16H, H_{11'}-H_{4'}); 1.28 (m, 2H, H_{3'}); 1.69 (m, 2H, H_{2'}); 3.32 (s, 6H, H₃); 3.49 (m, 2H, H_{1'}); 3.66 (m, 2H, H₂); 4.04 (m, 2H, H₁); 5.8 (m, 1H, OH).

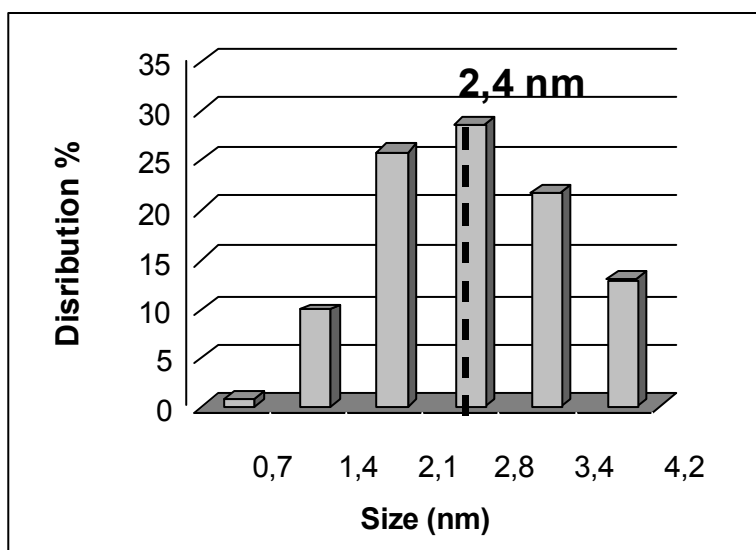
¹³C NMR (100 MHz, CDCl₃): δ (ppm): 14.1 (1C); 22.7-31.9 (10C); 51.9 (2C); 55.9 (1C); 65.6 (1C); 65.9 (1C); 118.8, 122.1 (2C).

¹⁹F NMR (36.5 MHz, CDCl₃): δ (ppm): -80 (s, 6F).

TEM of Rh-HEA12Cl



Size distribution histogram of rhodium(0) suspension stabilized with HEA12Cl



TEM of RH-HEA12N(Tf)₂

Size distribution histogram of rhodium(0) suspension stabilized with HEA12N(Tf)₂

