Electronic Supplementary Information (ESI)

Weakly-coordinated stable platinum nanocrystals

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Biphasic hydrosilylation of phenylacetylene with triethylsilane, by Pt-NP dispersions in [BMIm][BF4].[a]

Entry	Pt catalyst /µmol	Molar ratio substrate:catalyst	Mass% Pt in IL	V(IL) /µl	Reaction time /min	Conversion[b] /%	TOF[c] /h^{-1}	Ratio [d] distal : proximal
3	12.5	400:1	0.5	410	6	100	4000	4 : 1

[a] Phenylacetylene (0.54 ml, 5.0 mmol) and triethylsilane (0.79 ml, 5.0 mmol). Microwave (MW) heating, The pressure inside the MW reactor was set to p_{max} = 3.0 bar. The applied MW energy depended on the pressure and so the reaction temperature varied from 90 °C-150 °C. The maximum reaction temperature was set 150 °C. It was observed that reaction temperature which could be reached depended on the amount of IL or Pt-NPs in the biphasic reaction mixture. [b] Conversion determined from crude product by ^{1}H-NMR spectroscopy. [c] TOF = turnover frequency [mol(product)/mol(Pt) × h^{-1}]. [d] Determined from ^{1}H-NMR spectra of the reaction mixture. See example spectrum for entry 3 as Fig. S1 in ESI†. ^{1}H-NMR signals for the mixture of distal (main product) and proximal (byproduct) products were taken from the literature.

Fig. S1 (below) ^{1}H NMR spectrum with expanded sections as inserts. Example spectra of a 4:1mixture of distal (main product) and proximal (byproduct) vinylsilanes at full (100%) conversion (cf. Table 2 in manuscript, entry 3 or see above).