Supplementary Material (ESI) for Chemical Communications

Tuning of ruthenium *N*-heterocyclic carbene catalysts for ATRP

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Electronic supplementary information

Polymerisation of methyl methacrylate catalysed by complexes 1, 2, and 3.

Semilogarithmic plot of $\ln([M]_0/[M])$ *vs*. time:

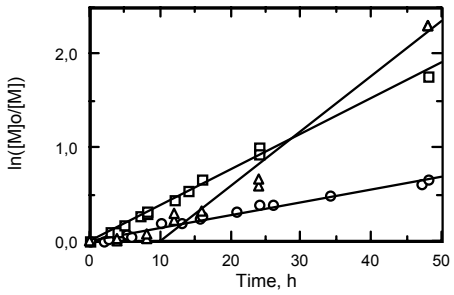

Fig. S1 Time dependence of $\ln([M]_0/[M])$ at 85 °C where $[M]_0$ and $[M]$ are the MMA concentrations at times 0 and t (see Table 1 for reaction conditions): complex **1** (Δ), $y = -0.60040 + 5.9069\ 10^{-2}\ x$ for reaction times ranging from 10 to 50 h; $r^2 = 0.974$; complex **2** (□), $y = -4.6911\ 10^{-4} + 3.8214\ 10^{-2}\ x$; $r^2 = 0.994$; complex **3** (○), $y = 1.1678\ 10^{-2} + 1.3854\ 10^{-2}\ x$; $r^2 = 0.979$.

Polymerisation of styrene catalysed by complex 5.

Semilogarithmic plot of $\ln([M]_0/[M])$ *vs*. time:

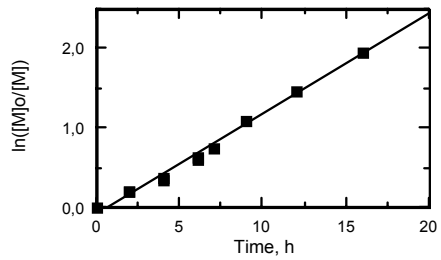

Fig. S2 Time dependence of $\ln([M]_0/[M])$ at 110 °C where $[M]_0$ and $[M]$ are the styrene concentrations at times 0 and t (see Table 1 for reaction conditions): complex **5** ($y = -0.088024 + 0.12633\ x$; $r^2 = 0.991$)

Plot of M_n *vs*. conversion:

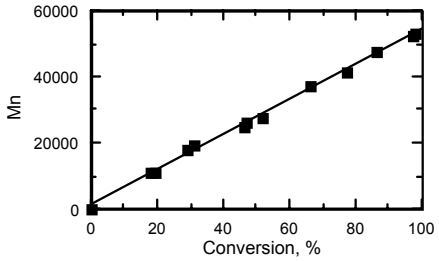

Fig. S3 Dependence of the polystyrene molecular weight M_n on monomer conversion (complex **5**, $y = 1304 + 529.73\,x$; $r^2 = 0.997$).

Plot of M_w/M_n *vs*. conversion:

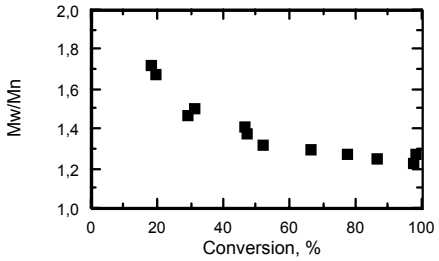

Fig. S4 Dependence of the molecular weight distributions, M_w/M_n, on styrene conversion (complex **5**).