Electronic Supporting Information

Functional isocoumarin-containing polymers synthesized by rhodium-catalyzed oxidative polycoupling of aryl diacid and internal diyne

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Table S1 Solvent effect on the polymerization of **1** and **2**[a]

Entry	Solvent	Yield (%)	M_w[b]	M_w/M_n[b]
1[c]	DMF	88.1	26 300	2.95
2	*o*-DCB	Trace		
3	DMSO	Trace		
4	*o*-xylene	Trace		

[a] Carried out in air at 120 °C for 24 h in the presence of $[Cp^*RhCl_2]_2$ and $Cu(OAc)_2{\cdot}H_2O$. [**1**] = 0.10 M, [**2**] = 0.10 M, [Rh] = 0.002 M, [Cu] = 0.005 M. [b] Determined by GPC in THF on the basis of a linear polystyrene calibration. [c] Data taken from Table 3, entry 2.

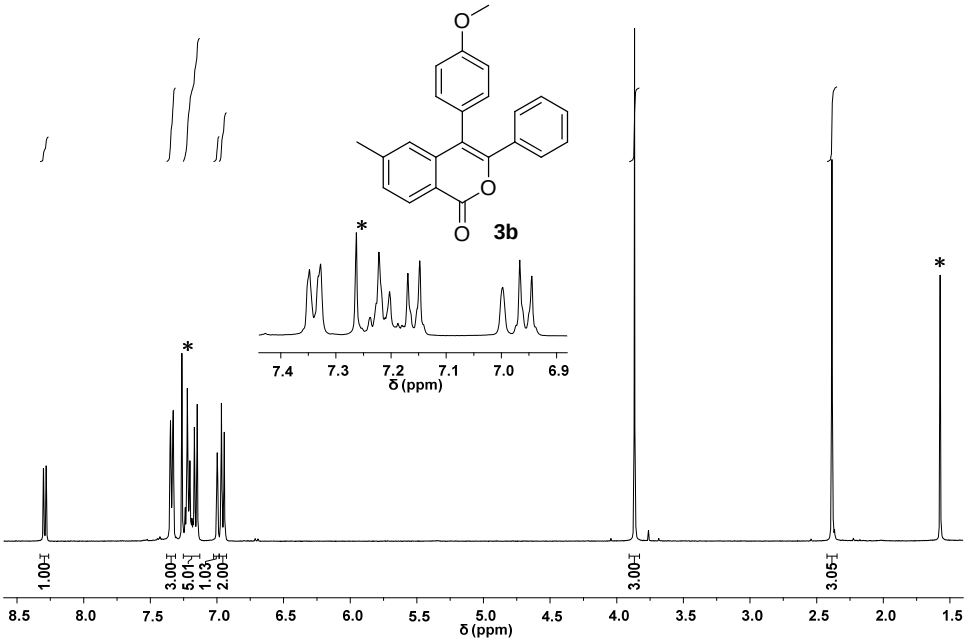

Fig. S1 ^{1}H NMR spectrum of **3b** in chloroform-*d*.

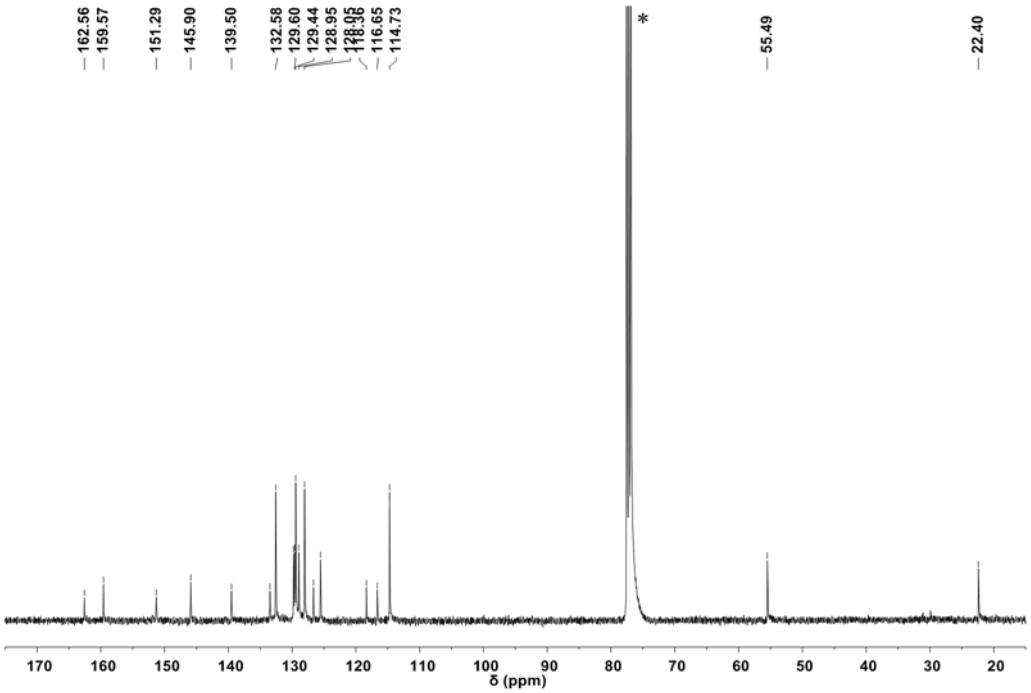

Fig. S2 ^{13}C NMR spectrum of **3b** in chloroform-*d*.

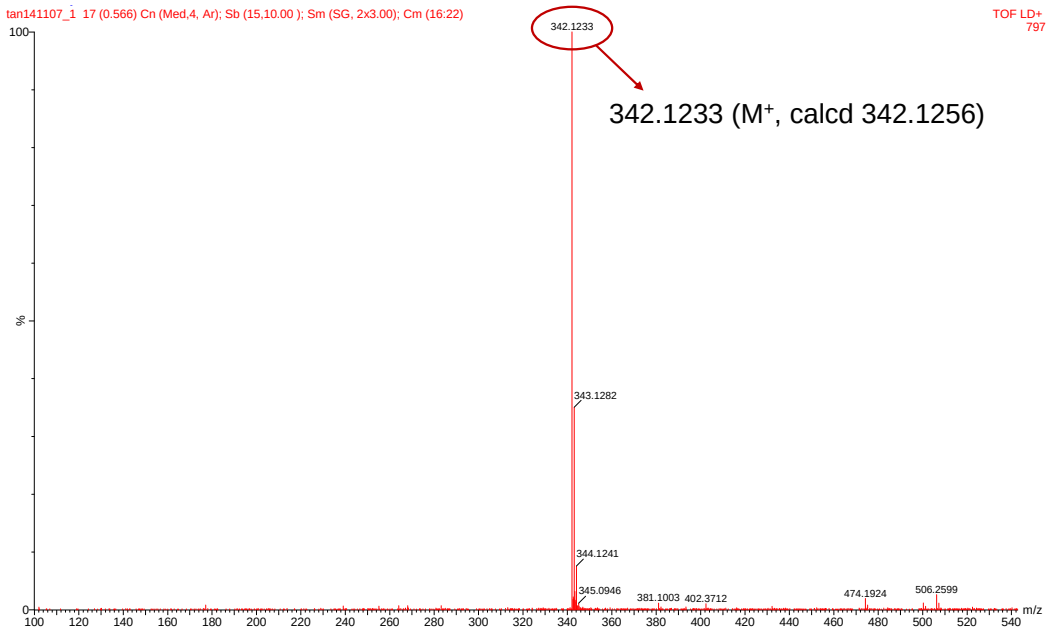

Fig. S3 High-resolution mass spectrum of **3b**.

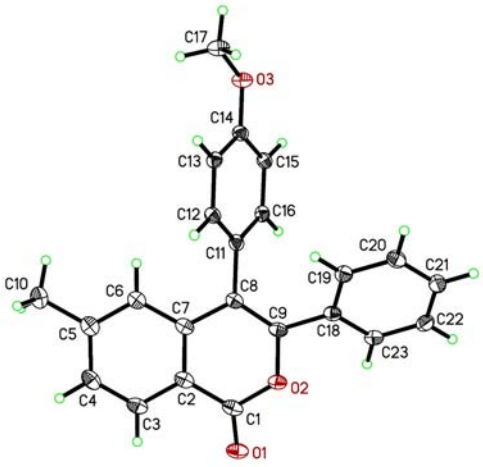

Fig. S4 ORTEP drawing of single crystals of **3b** (CCDC 1043916).

Table S2 Crystal data and structure refinement for model compound **3b**

Empirical formula	$C_{23}H_{18}O_3$
Formula weight	342.37
Temperature	99.9(4) K
Wavelength	1.5418 Å
Crystal system	Monoclinic
Space group	Pc
Unit cell dimensions	a = 5.82646(9) Å α = 90°. b = 9.44106(13) Å β = 100.1098(15)°. c = 15.6160(3) Å γ = 90°.
Volume	845.67(2) $Å^3$
Z, Calculated density	2, 1.345 Mg/m^3
Absorption coefficient	0.707 mm^{-1}
F(000)	360
Crystal size	0.20 x 0.18 x 0.05 mm^3
Theta range for data collection	4.68 to 67.47°.
Index ranges	-6<=h<=5, -11<=k<=10, -17<=l<=18
Reflections collected	4507
Independent reflections	2180 [R(int) = 0.0120]
Completeness to theta = 66.50°	99.63%
Max. and min. transmission	1.00000 and 0.87146
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	2180 / 2 / 237
Goodness-of-fit on F^2	1.001
Final R indices [I>2sigma(I)]	R1 = 0.0221, wR2 = 0.0557
R indices (all data)	R1 = 0.0222, wR2 = 0.0558
Largest diff. peak and hole	0.104 and -0.131 $e.Å^{-3}$

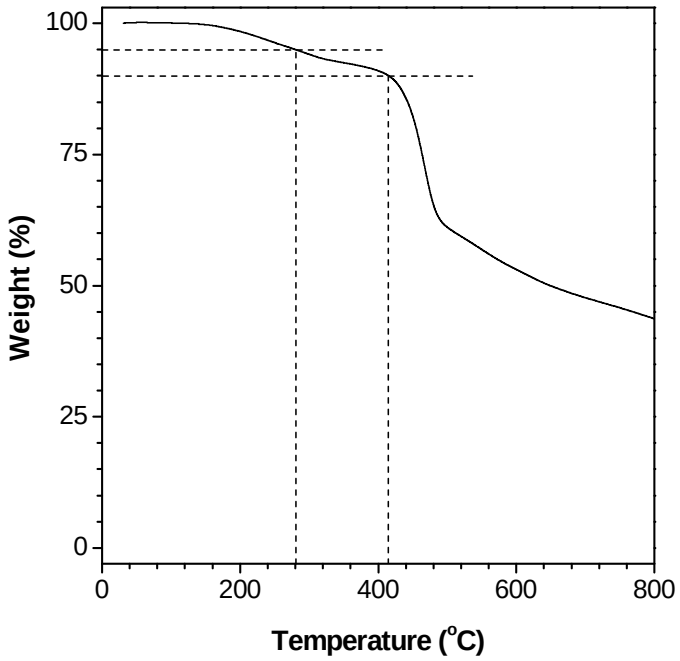

Fig. S5 TGA thermogram of P**1**/**2** recorded under nitrogen at a heating rate of 10 °C/min.

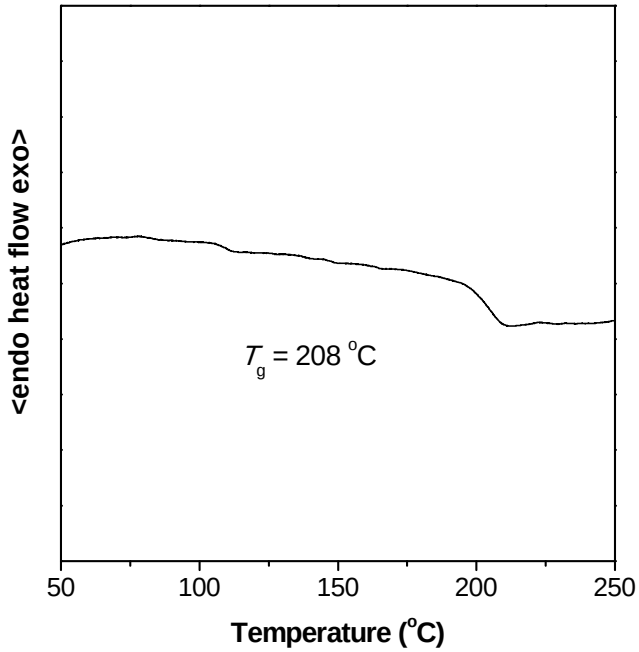

Fig. S6 DSC thermogram of P**1**/**2** recorded under nitrogen during the second heating cycle at a heating rate of 10 °C/min.

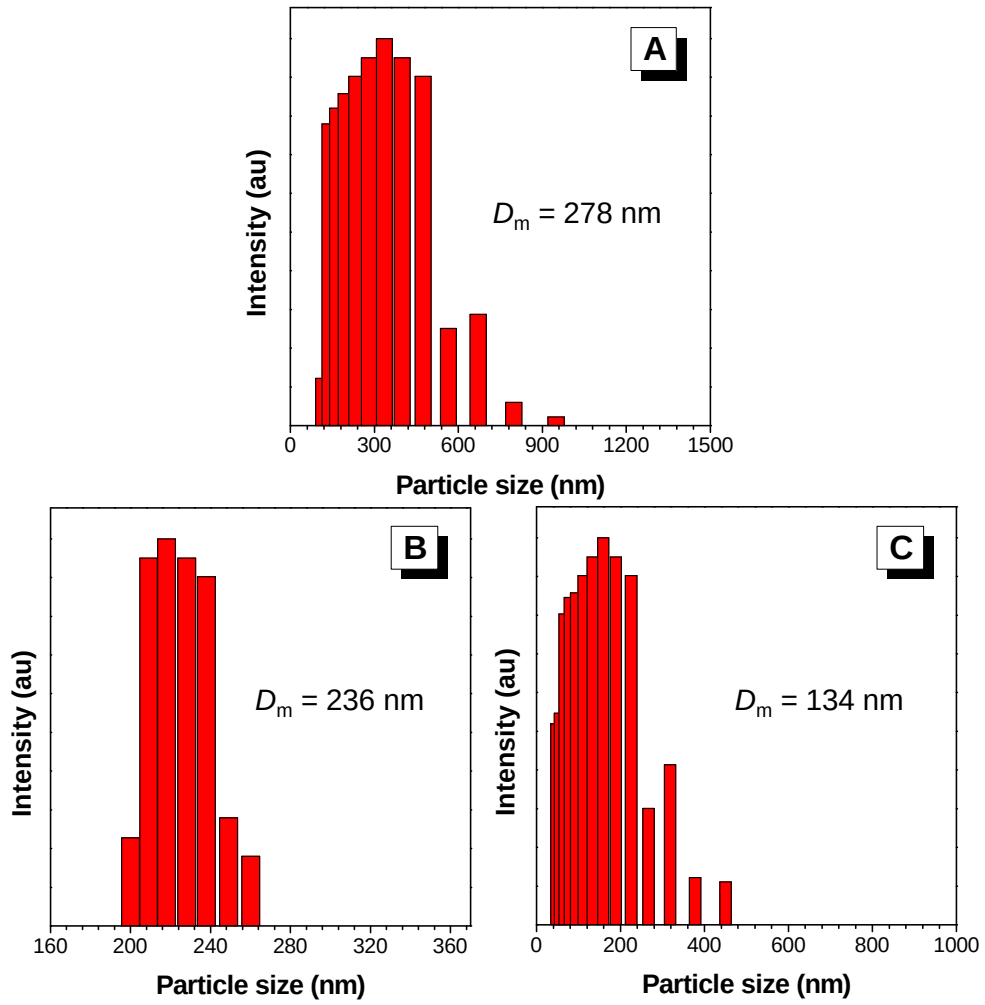

Fig. S7 Size distributions of nanoparticles of P**1**/**2** suspended in THF/water mixtures with (A) 70 vol %, (B) 80 vol % and (C) 99 vol % water fractions. Concentration: 10 μM.

Table S3 Refractive indices and chromatic dispersions of P**1**/**2**[a]

Entry	Time (min)	$n_{632.8}$	v_D	D
1	0	1.6920	7.7333	0.1293
2	10	1.6466	15.8475	0.0631
3	30	1.6304	16.0146	0.0624
4	40	1.6174	17.9358	0.0558

[a] Abbreviation: n = refractive index, v_D = Abbé number = $(n_D - 1)/(n_F - n_C)$, where n_D, n_F and n_C are the n values at wavelengths of Fraunhofer D, F and C spectral lines of 589.2, 486.1 and 656.3 nm, respectively; D = chromatic dispersion = $1/v_D$.