SUPPORT INFORMATION

A self-curing triphenol A-based phthalonitrile resin precursor acts as flexibilizer and curing agent for phthalonitrile resin

Yue Hu,[a] Zhihuan Weng*,[a] Yu Qi,[a] Jinyan Wang,[a] Shouhai Zhang,[a] Cheng Liu,[a] Lishuai Zong,[a] and Xigao Jian[a]

[a] State Key Laboratory of Fine Chemicals, Liaoning High Performance Resin Engineering Research Center, Department of Polymer Science & Materials, Dalian University of Technology, Dalian 116024, P.R. China. Email: zweng@dlut.edu.cn

Table 1S. The reactions conditions for preparing TPPA-Ph precursors.

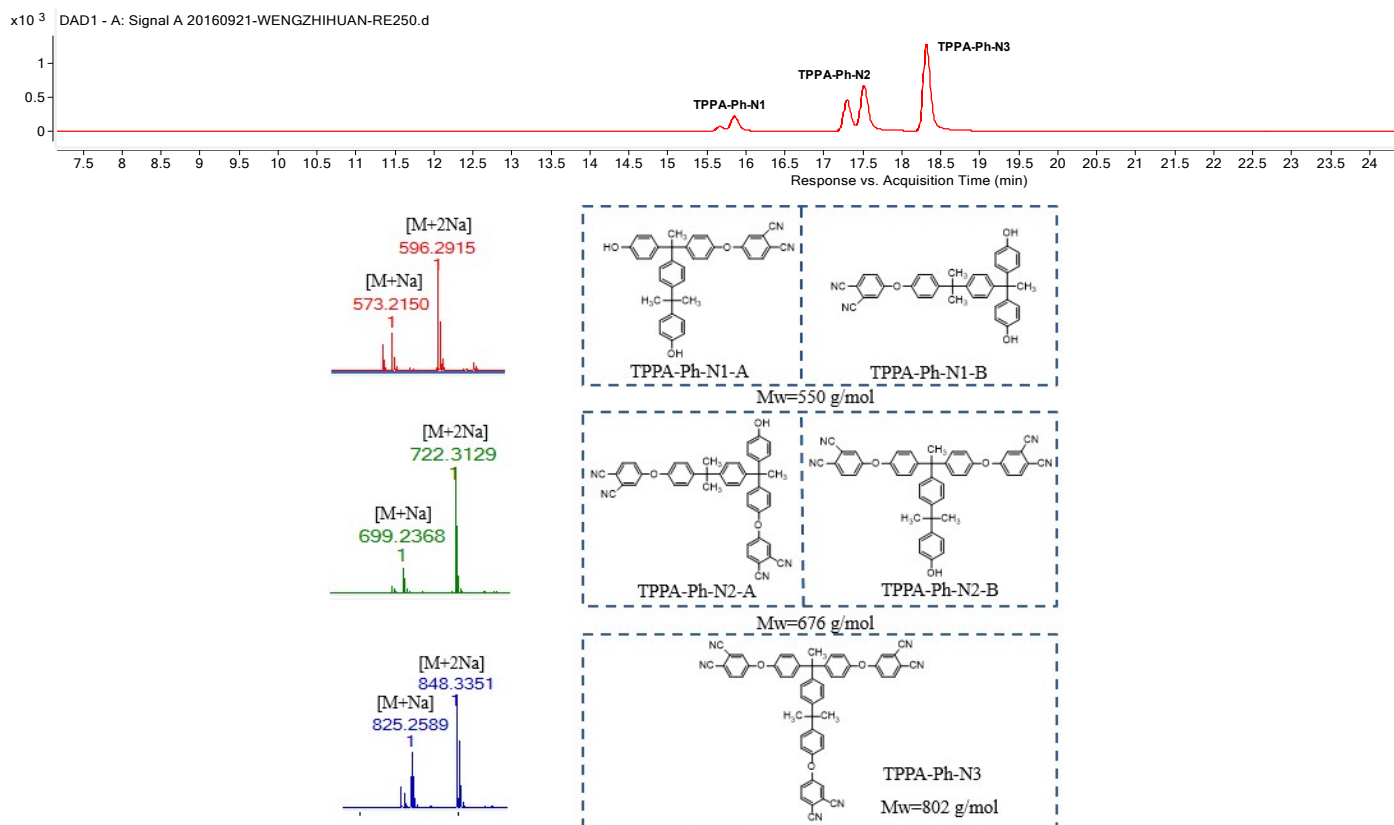| TPPA-Ph precursors	The molar ratio of TPPA : K$_2$CO$_3$: NPh	Reaction temperature (°C)	Reaction time (h)
P1	1:2.5:3.2	80	24
P2	1:1.5:3.1	25	24
P3	1:1.5:2.05	25	24
P4	1:1.5:1.05	25	24

Figure 1S. LC-MS of TPPA-Ph (P2) and molecular ion peaks in negative mode of products.
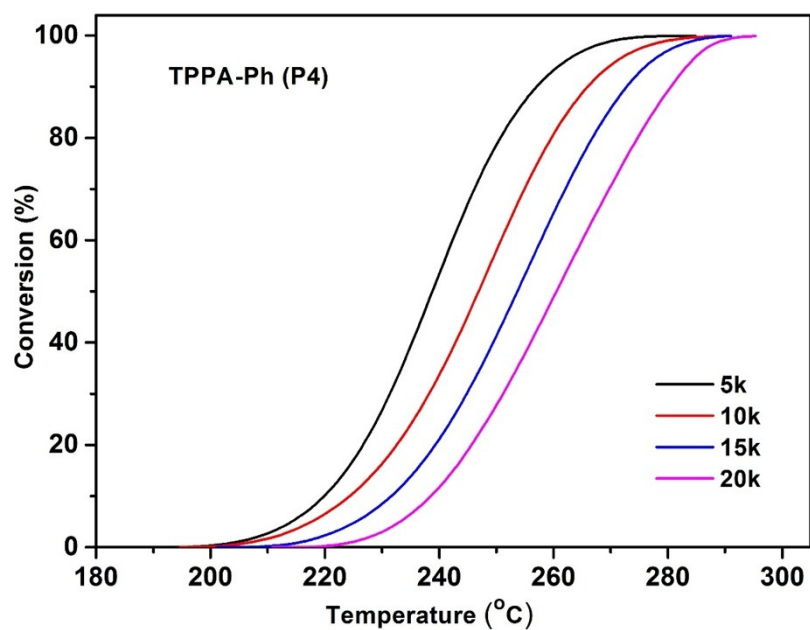
Figure 2S. Conversion α as a function of temperature for TPPA-Ph (P4) at various heating rates.
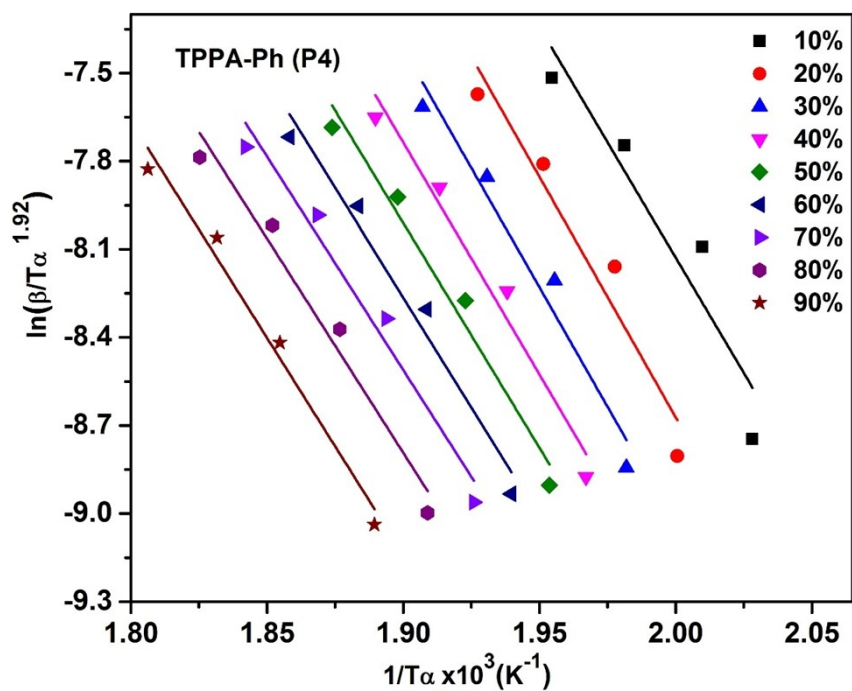

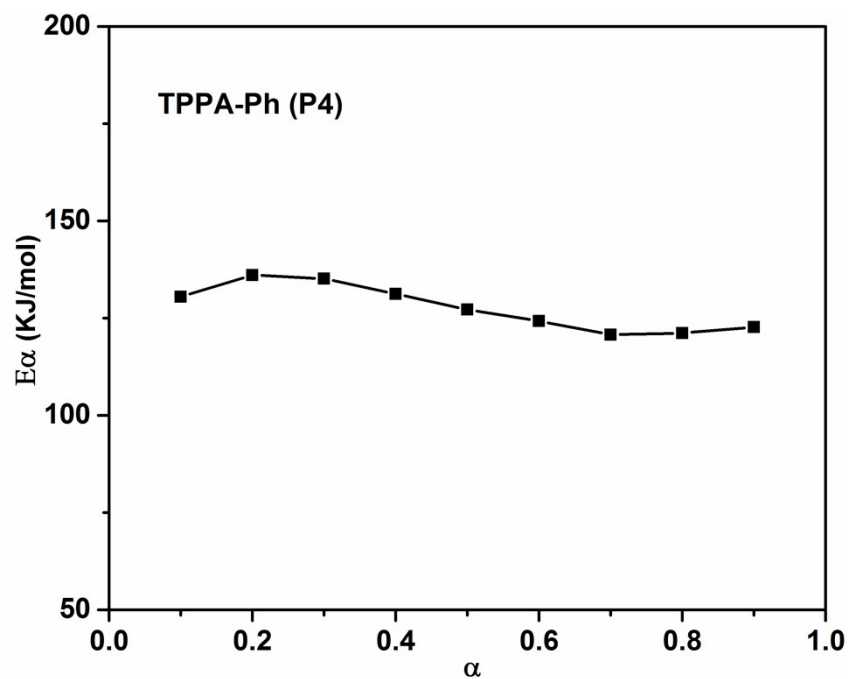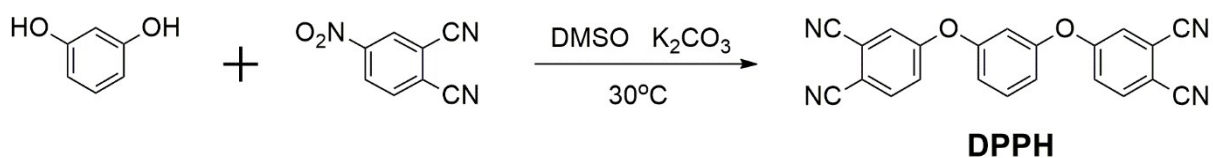**Figure 3S.** Starink plots at various degrees of conversion for TPPA-Ph (P4).

Figure 4S. Variation of *E*α versus α for TPPA-Ph (P4) (Starink method).

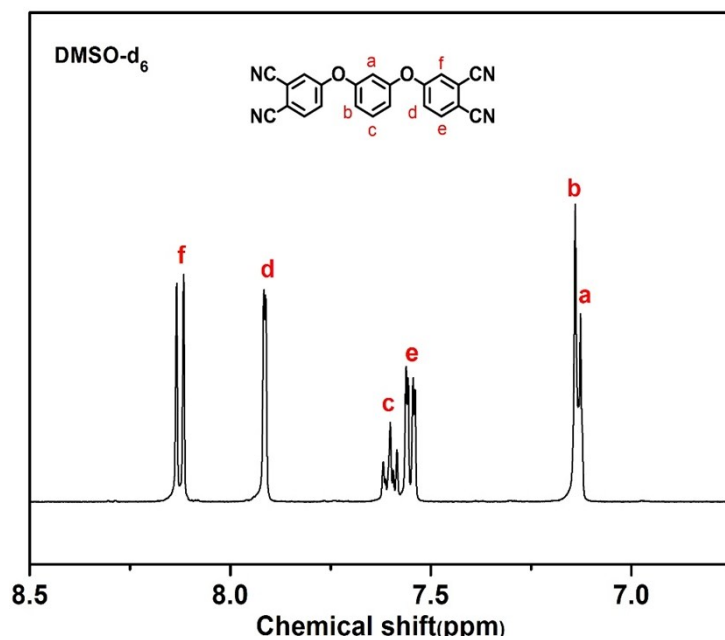**Scheme 1S.** Synthesis of resorcinol-based phthalonitrile resin precursor (DPPH).

Figure 5S. ^{1}H NMR spectrum of DPPH.