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Supplementary Material

A novel column modification approach for capillary gas chromatography: combination with a triptycene-based stationary phase achieving high separation performance and inertness

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1. Characterization data.

TP-2OH： ^{1}H NMR (400 MHz, Acetone) δ 7.83 (s, 2H), 7.46-7.37 (m, 4H), 7.02-6.93 (m, 4H), 6.39 (s, 2H), 5.93 (s, 2H).

PPG-TsCl： ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.78 (d, 2H), 7.30 (d, 2H), 4.63 (m, 1H), 3.46 (m, 21H), 2.42 (s, 3H), 1.05 (d, 21H).

TPPG： ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.37 (s, 4H), 6.96 (s, 4H), 6.57 (m, 2H), 5.96 – 5.80 (m, 2H), 3.48 (m, 42H), 1.13 (m, 42H).

2. ^{1}H NMR spectra

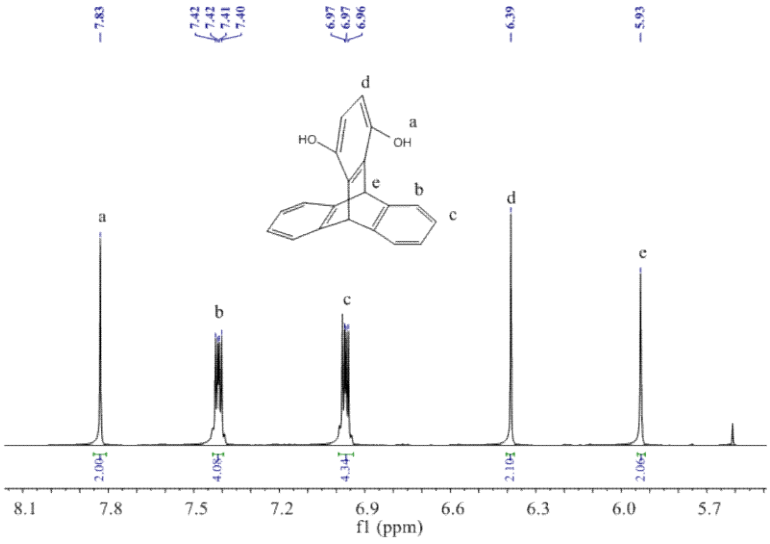

Fig. S1 ^{1}H NMR spectra (400 MHz, Acetone) of TP-2OH

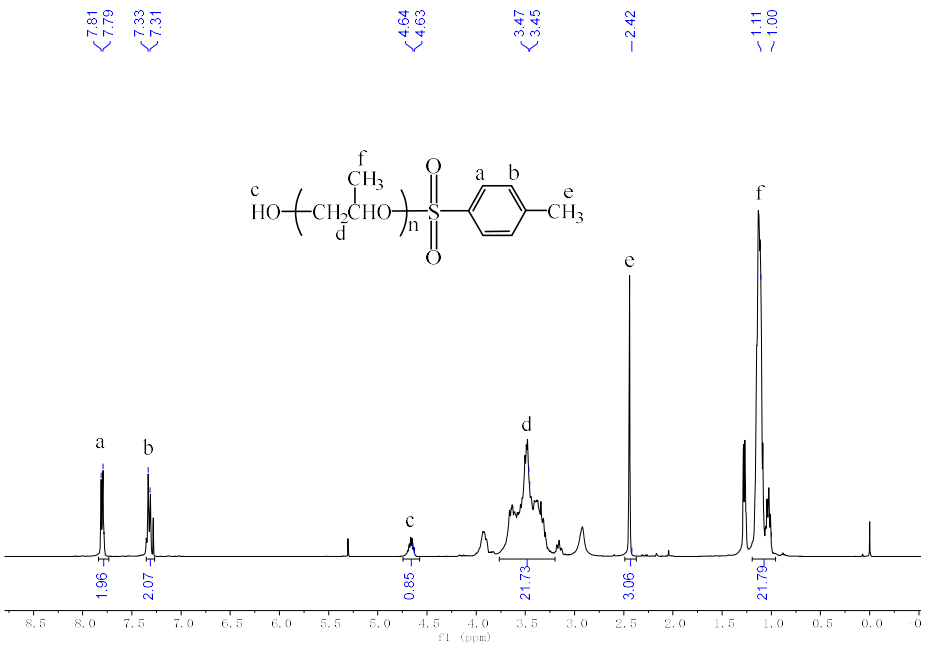

Fig. S2 [1]H NMR spectra (400 MHz, Acetone) of PPG-TsCl

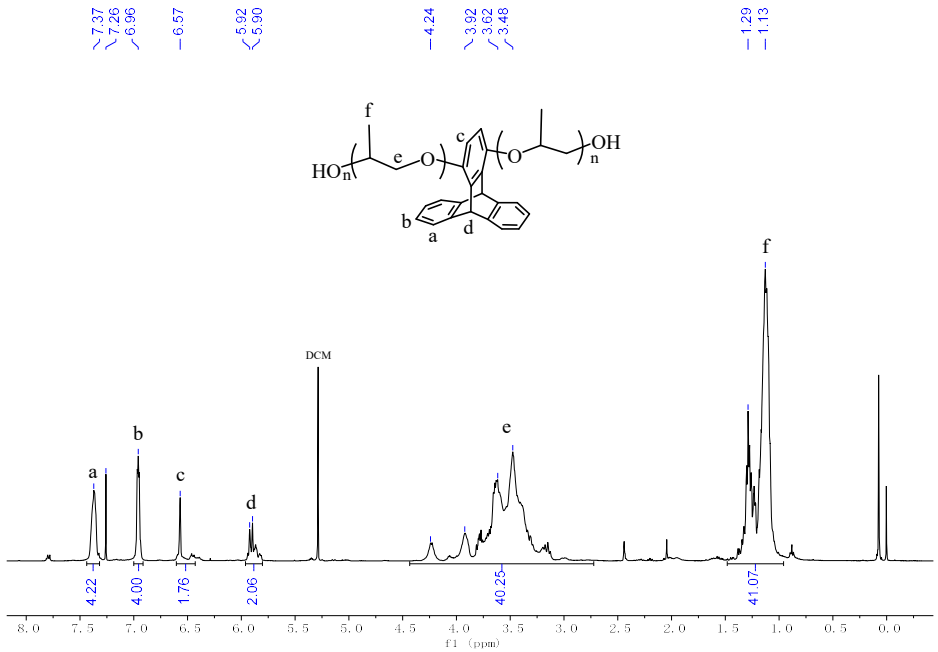

Fig. S3 [1]H NMR spectra (400 MHz, Acetone) of TPPG.

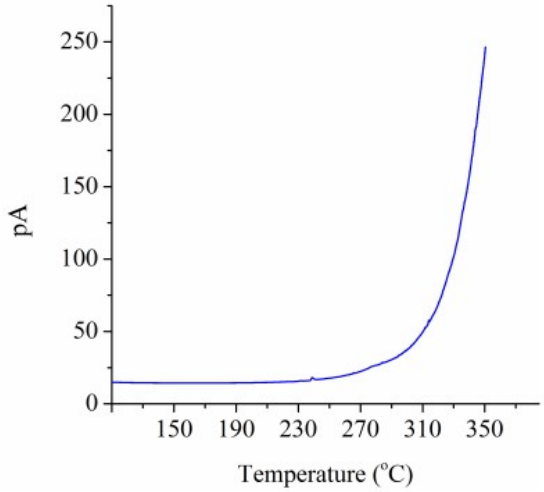

Fig. S4 column bleeding profile of the PM-TPPG column determined from 40 °C to 400 °C at 3 °C/min under nitrogen,

Table S1 Repeatability and reproducibility of the PM-TPPG capillary column on the retention times (t_R, min) of the indicated isomers (n = 5).

Analyte	Run-to-run		Day-to-day		Column-to-column	
	t_R	RSD (%)	t_R	RSD (%)	t_R	RSD (%)
Aniline	1.752	0.09	1.750	0.15	1.754	3.4
o-Toluidine	2.336	0.03	2.337	0.18	2.334	3.2
p-Toluidine	2.522	0.05	2.521	0.14	2.523	2.9
m-Toluidine	2.673	0.04	2.672	0.17	2.671	2.7
2,6-Xylidine	3.156	0.04	3.154	0.16	3.153	4.1
2,4-Xylidine	3.447	0.06	3.448	0.18	3.449	3.9
2,5-Xylidine	3.601	0.05	3.602	0.14	3.604	3.7
3,5-Xylidine	4.036	0.06	4.035	0.13	4.034	3.6
2,3-Xylidine	4.276	0.02	4.274	0.22	4.277	2.8
3,4-Xylidine	4.473	0.03	4.471	0.21	4.475	3.5