Electronic Supplementary Material (ESI) for Journal of Materials Chemistry
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Supporting Information

Nematic self-organization of regioselectively polyfunctionalized [60]Fullerene

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Materials and Methods

All reagents were used as purchased from commercial sources without further purification. Solvents were dried using standard techniques prior to use. All reactions were performed in standard glassware under an inert argon atmosphere. Evaporation and concentration were done using water-aspirator pressure and drying *in vacuo* at 10^{-2} Torr. Products were isolated by column chromatography (silica gel 60, particle size 40-63 μm, 230-400 mesh, Merck). TLC: Pre-coated glass sheets with silica gel 60 F_{254}, Merck. UV/Vis spectra (λ_{max} in nm (ε)) were measured on a Hitachi U-3000 spectrophotometer. IR spectra (cm^{-1}) were determined on an ATI-Mattson-Genesis instrument, series FTIR. NMR spectra were recorded on a Bruker AM 300 (300 MHz) with solvent signal as reference (δ in ppm).

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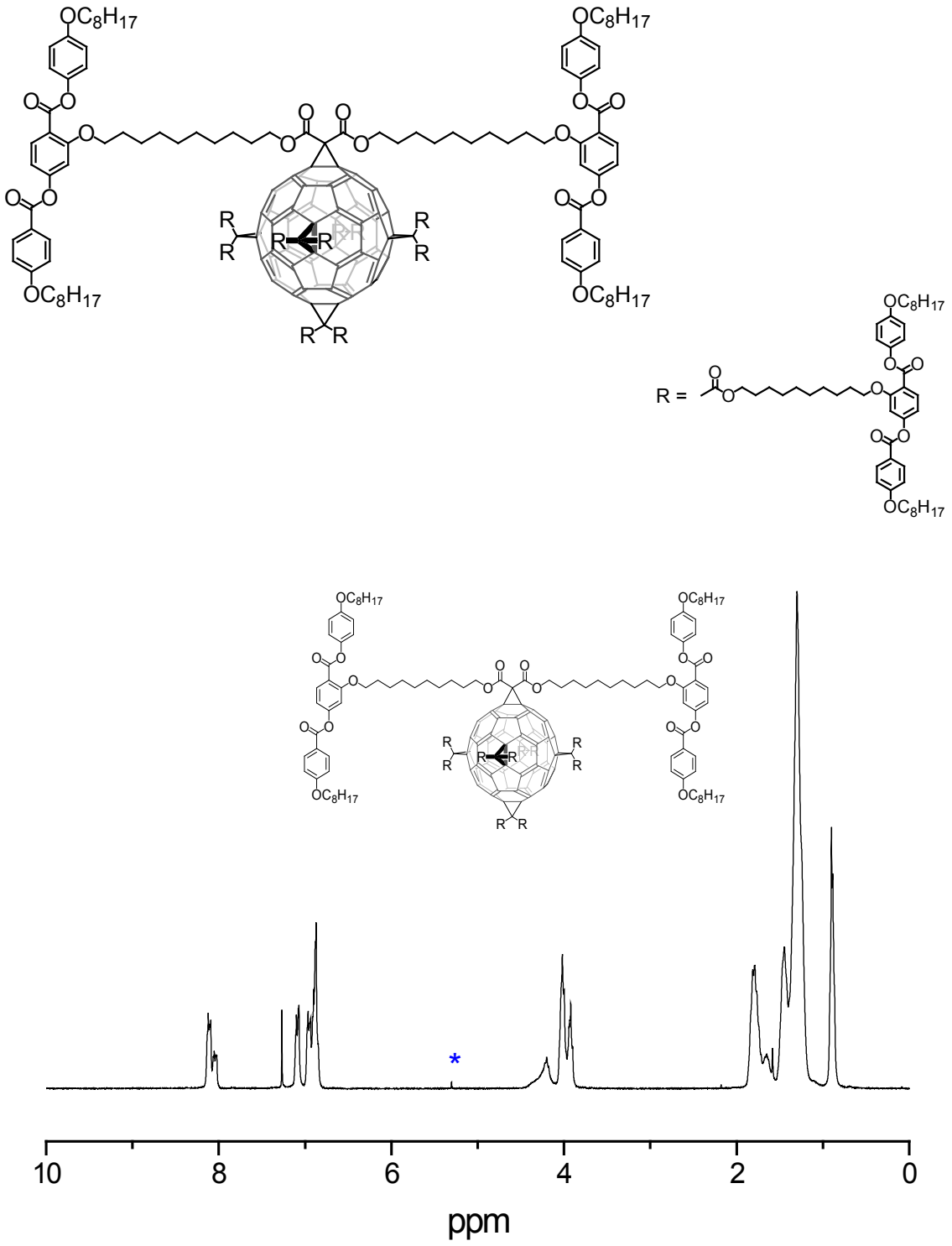
MALDI-TOF mass spectra were measured on a Bruker Ultraflex TOF-TOF matrix-assisted laser desorption time-of-flight mass spectrometer (MALD-TOF).



^{1}H NMR ($CDCl_3$, 300 MHz) of hexakisadduct [6:0] **1** (* CH_2Cl_2)

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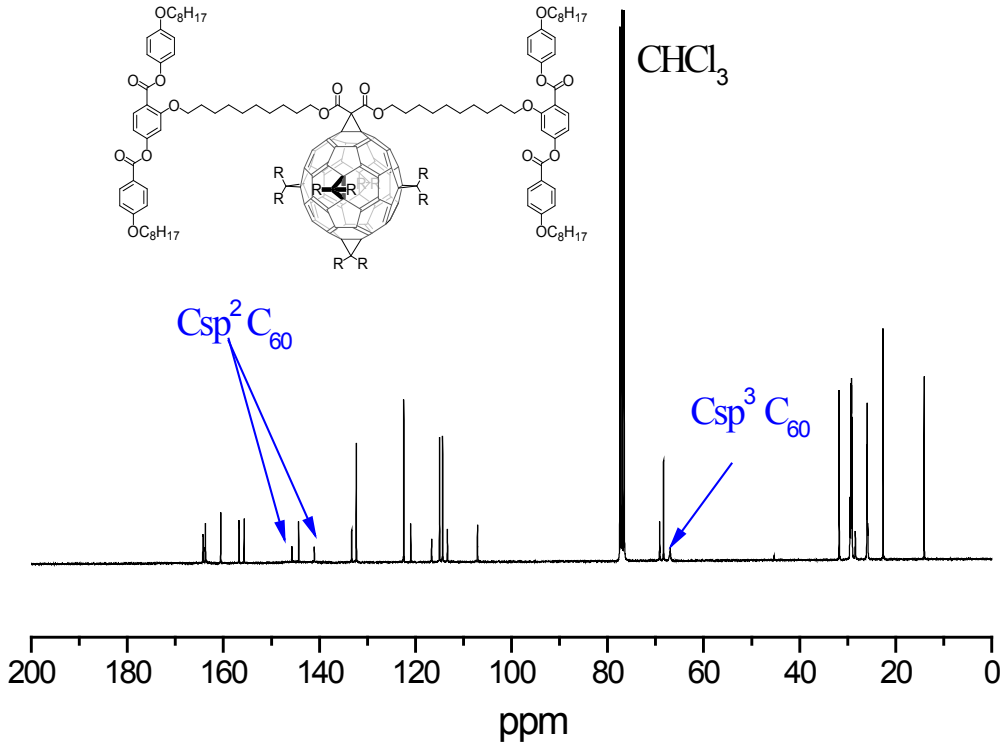
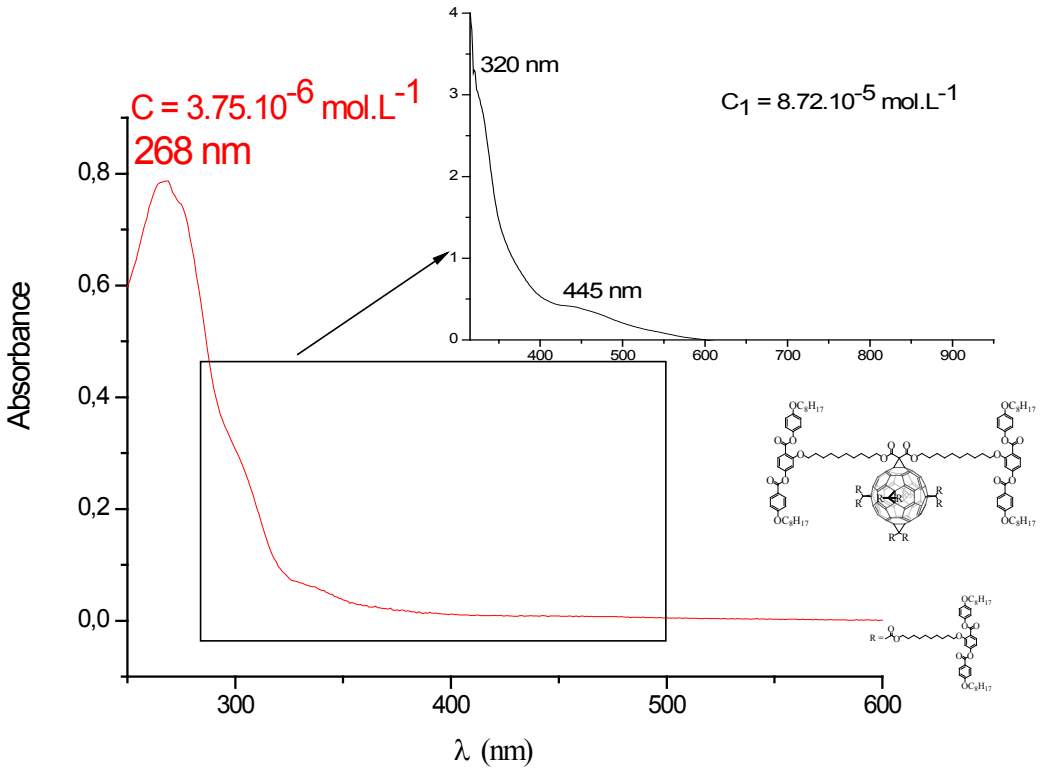


^{13}C NMR ($CDCl_3$, 75 MHz) of [6:0] hexakisadduct **1**



UV-visible spectrum (CH_2Cl_2) of [6:0] hexakisadduct **1**

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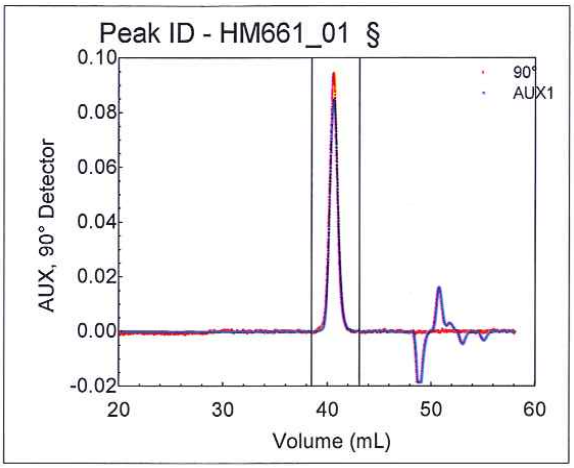
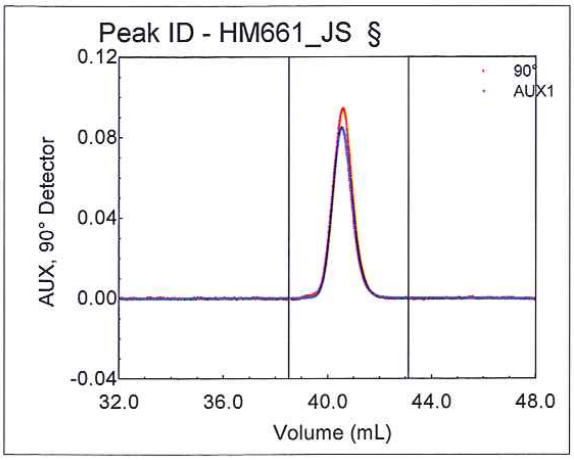




RESULTS

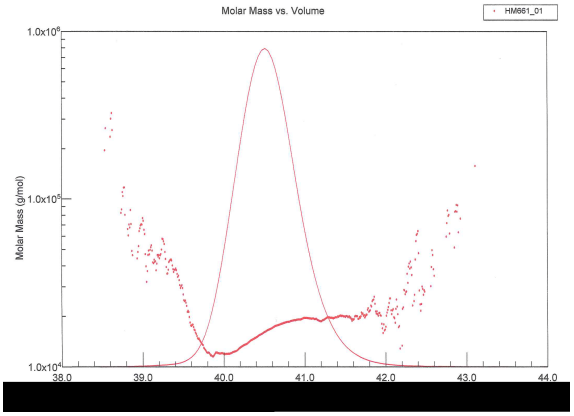
		PEAK #1
Volume (mL)	:	38.508 - 43.117
Slices	:	554
A2 (mol mL/g²)	:	0.000e+00
Fit degree	:	1
Injected Mass (g)	:	3.0600e-04
dn/dc (mL/g)	:	0.153
Polydispersity(Mw/Mn)	:	1.033±0.028 (2.7%)
Polydispersity(Mz/Mn)	:	1.078±0.073 (7%)

Molar Mass Moments (g/mol)

Mn	:	1.579e+04 (1.7%)
Mw	:	1.631e+04 (2.1%)
Mz	:	1.703e+04 (6%)

R.M.S. Radius Moments (nm)

Rn	:	0.0 (0%)
Rw	:	0.0 (0%)
Rz	:	0.0 (0%)



GPC (THF) of [6:0] hexakisadduct **1**

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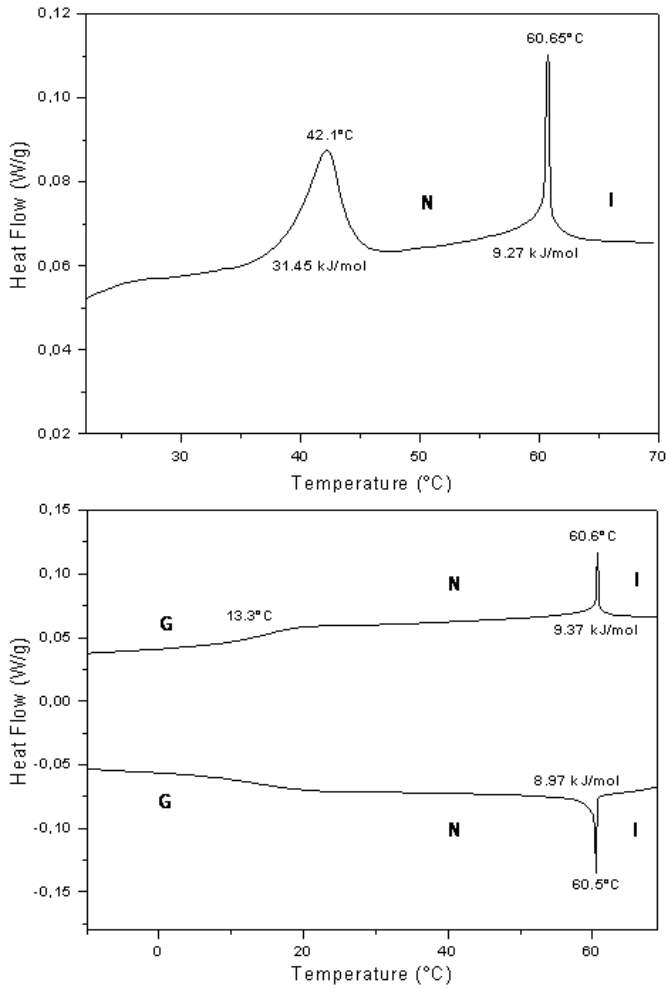

DSC curves obtained for [6:0] hexakisadduct **1**: top: first heating, bottom: second heating-cooling cycle. G = glass, N = nematic phase and I = isotropic phase.

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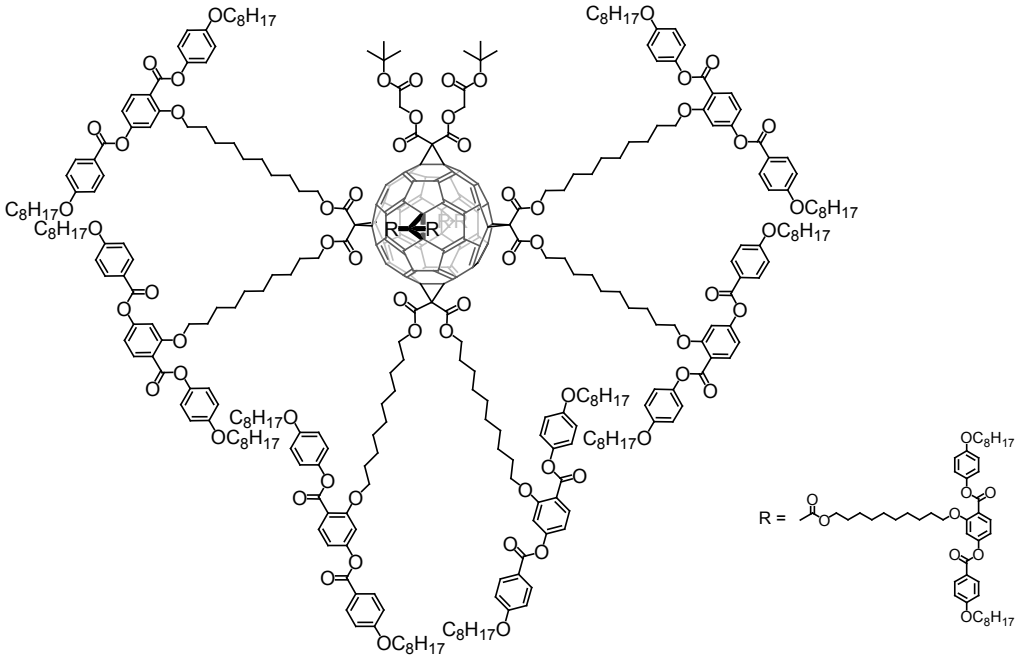

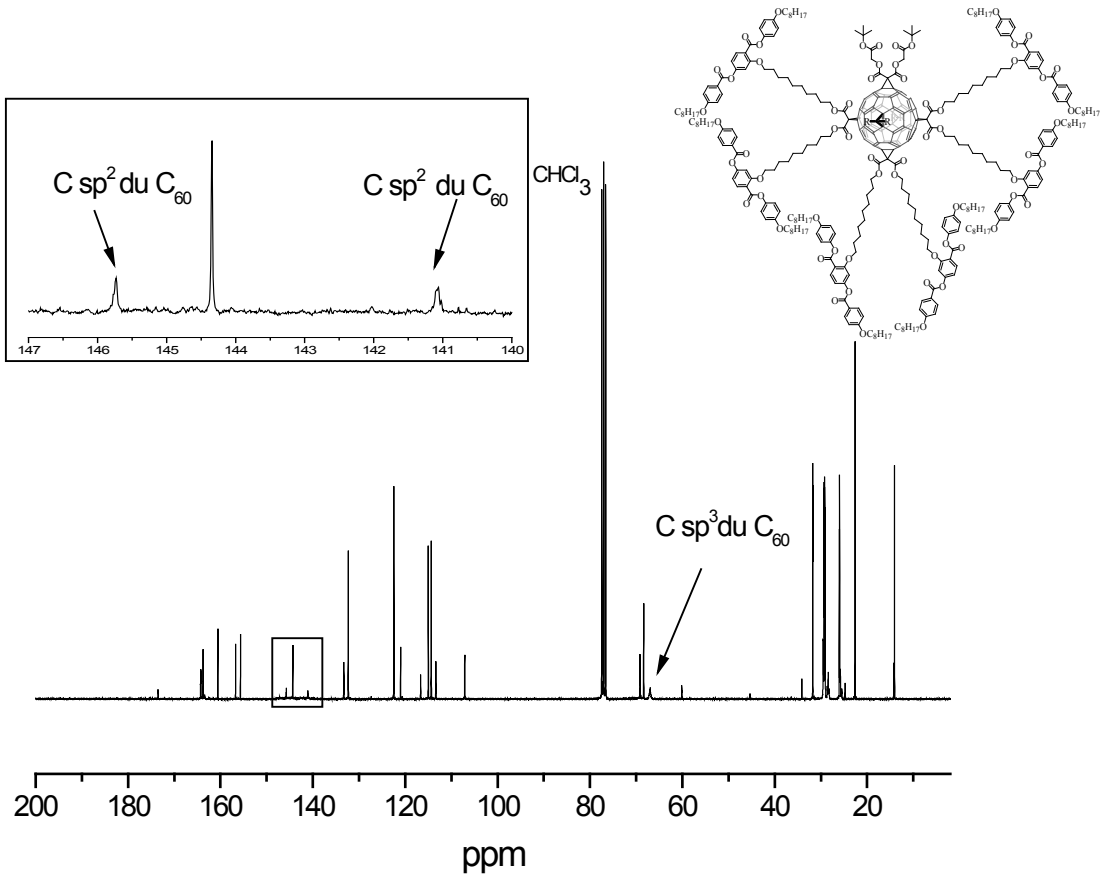

^{13}C NMR spectrum ($CDCl_3$, 75 MHz) of [5:1] [60]Fullerene hexakisadduct **2**

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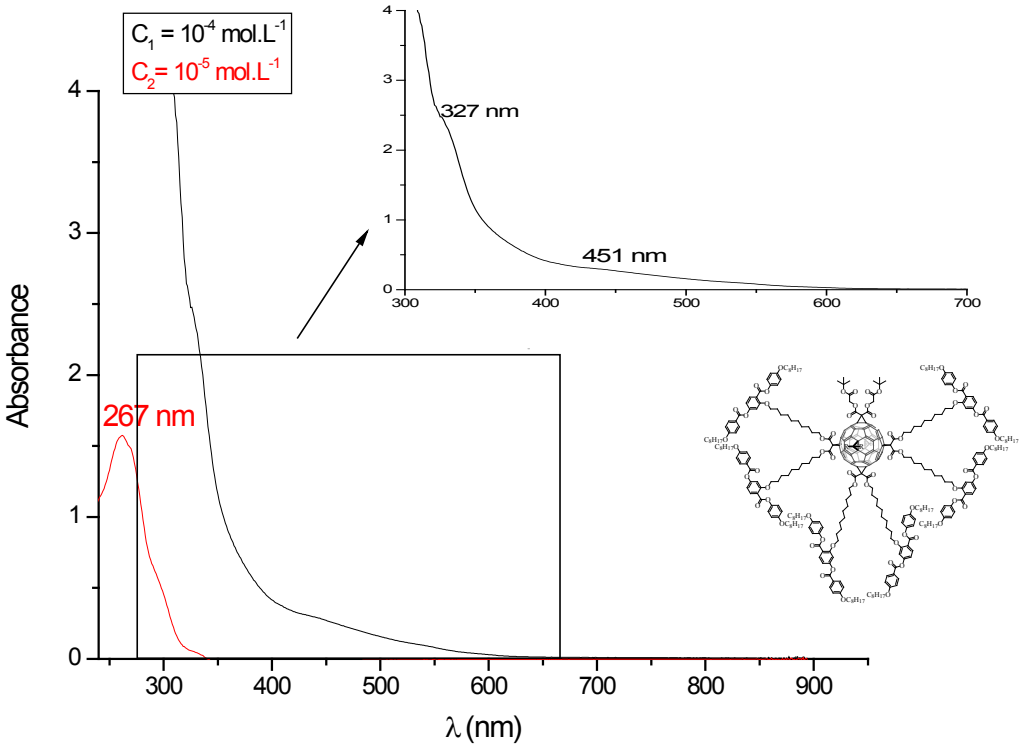
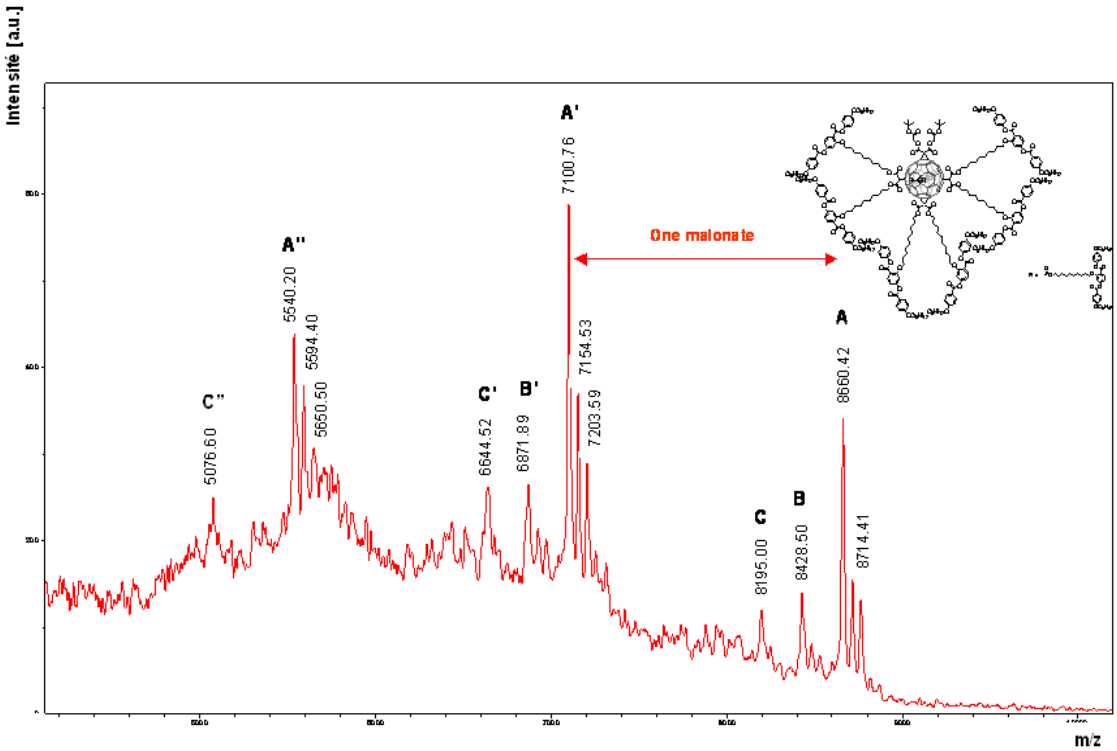
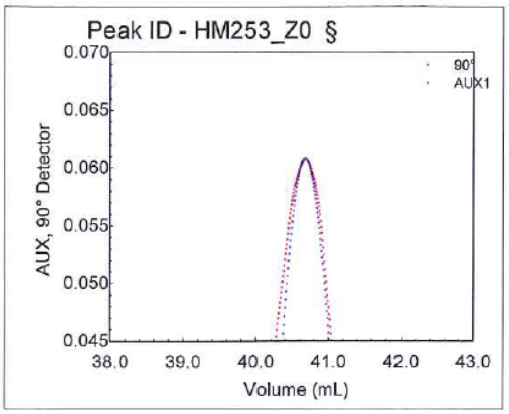
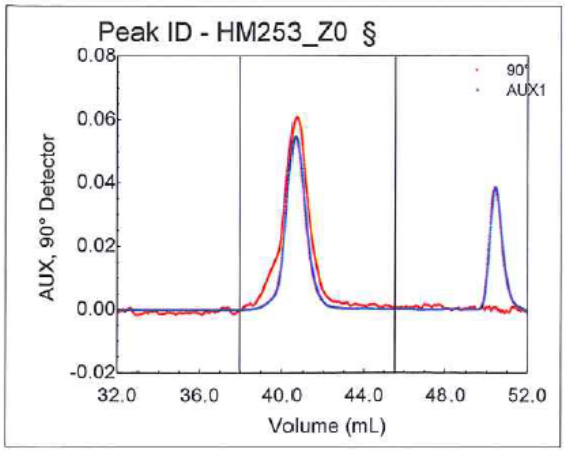


UV-visible spectrum (CH_2Cl_2) of [5:1] [60]Fullerene hexakisadduct **2**



Maldi-tof spectrum of [5:1] [60]Fullerene hexakisadduct **2**





RESULTS

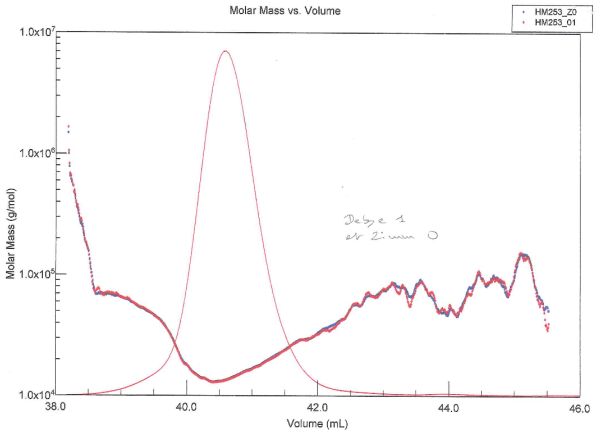
		PEAK #1
Volume (mL)	:	37.942 - 45.525
Slices	:	911
A2 (mol mL/g²)	:	0.000e+00
Fit degree	:	0
Injected Mass (g)	:	3.0400e-04
dn/dc (mL/g)	:	0.150
Polydispersity(Mw/Mn)	:	1.142±0.014 (1.2%)
Polydispersity(Mz/Mn)	:	1.609±0.134 (8%)

Molar Mass Moments (g/mol)

Mn	:	1.625e+04 (0.5%)
Mw	:	1.855e+04 (1.1%)
Mz	:	2.614e+04 (8%)

R.M.S. Radius Moments (nm)

Rn	:	0.0 (0%)
Rw	:	0.0 (0%)
Rz	:	0.0 (0%)



GPC (THF) of [5:1] [60]Fullerene hexakisadduct **2**

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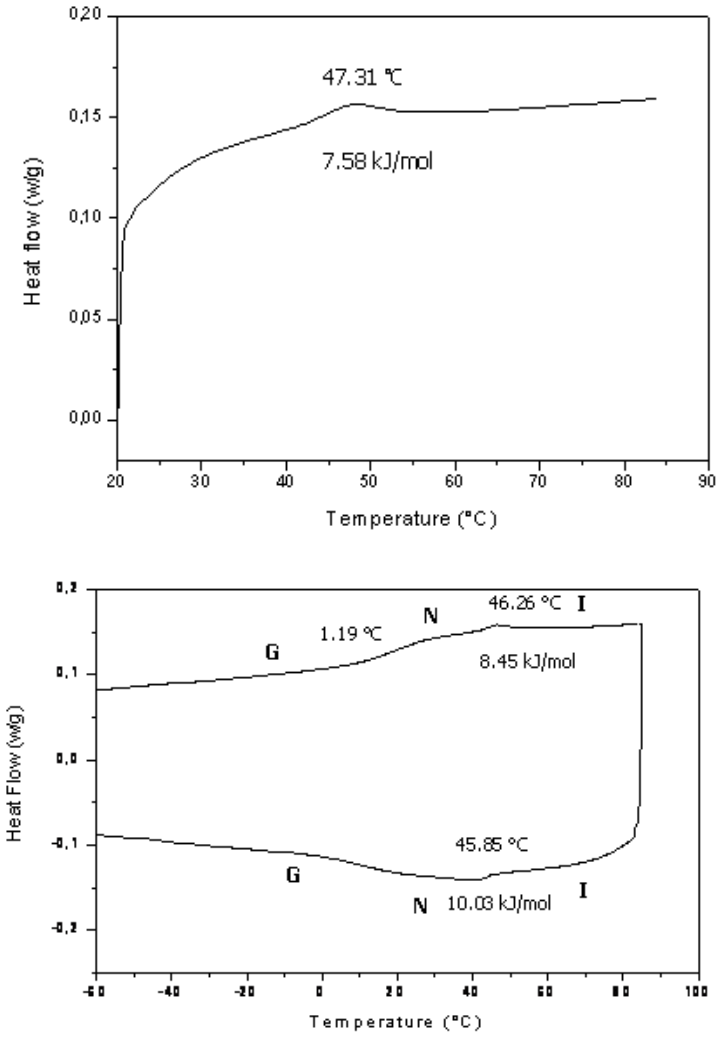

DSC curves obtained for [5:1] hexakisadduct **2**: top: first heating, bottom: second heating-cooling cycle. G = glass, N = nematic phase and I = isotropic phase.

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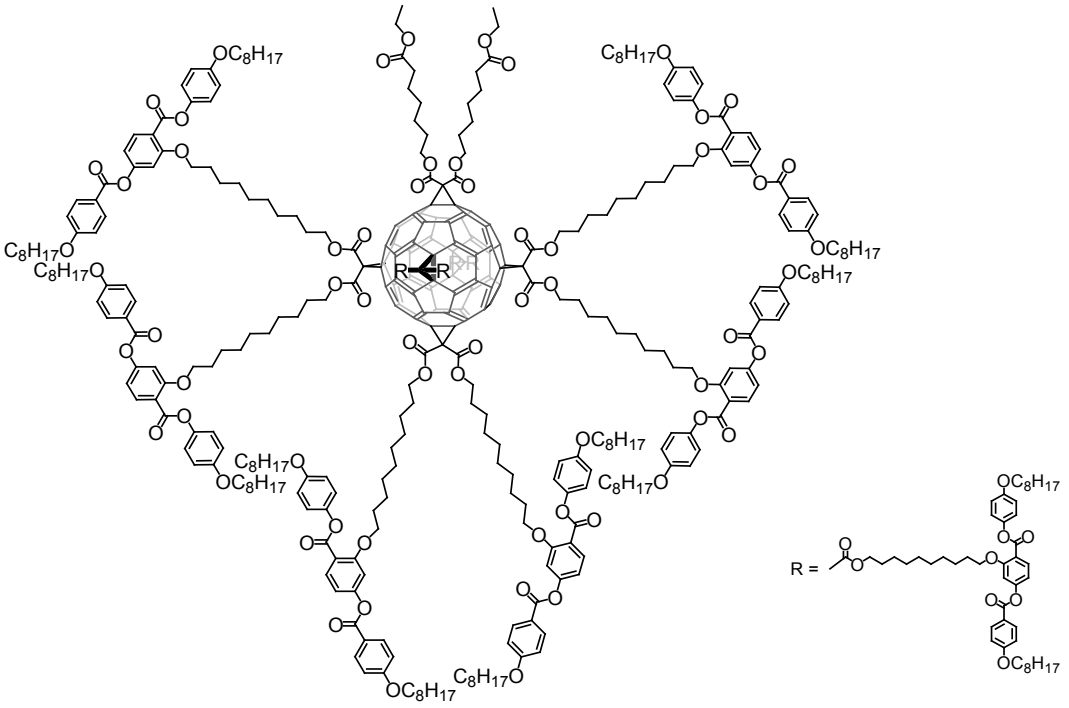

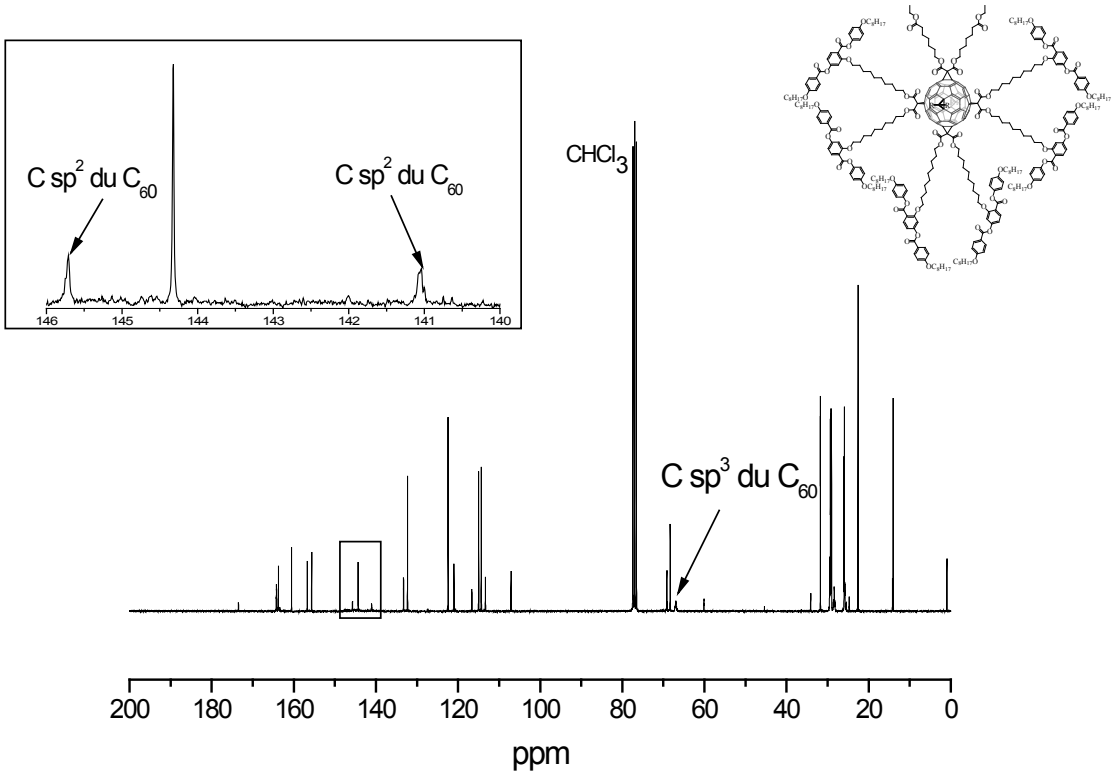

^{13}C NMR spectrum ($CDCl_3$, 75 MHz) of [5:1] [60]Fullerene hexakisadduct **3**

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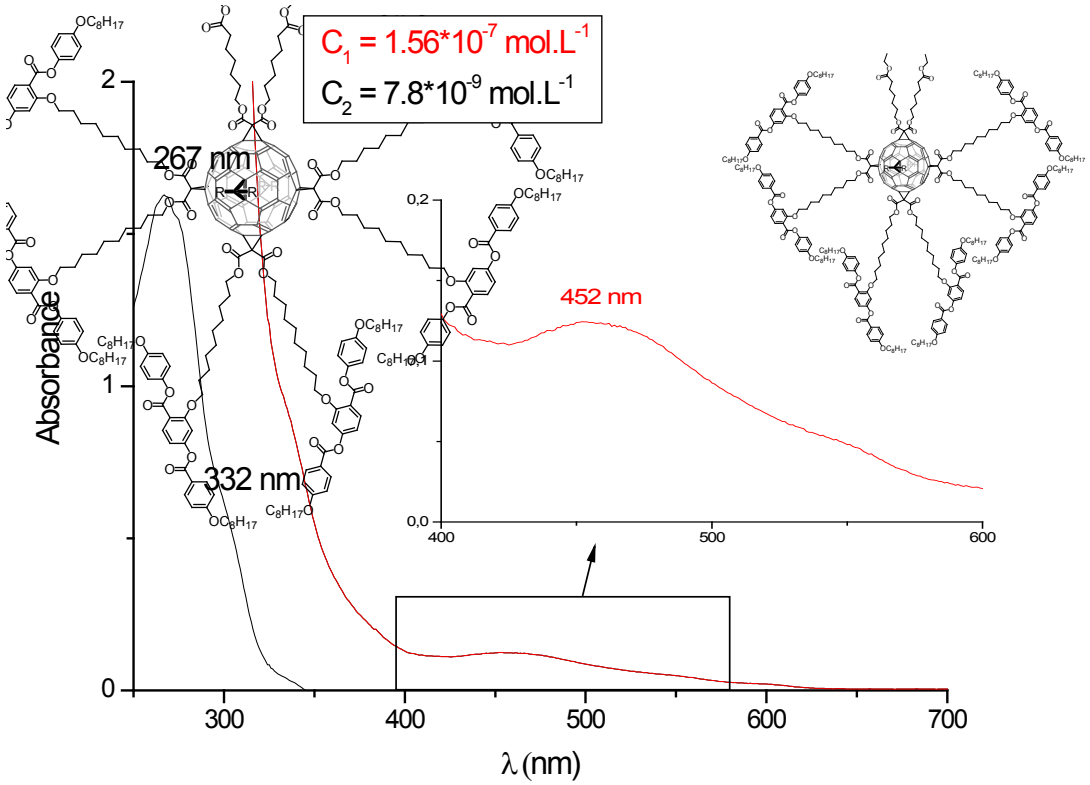
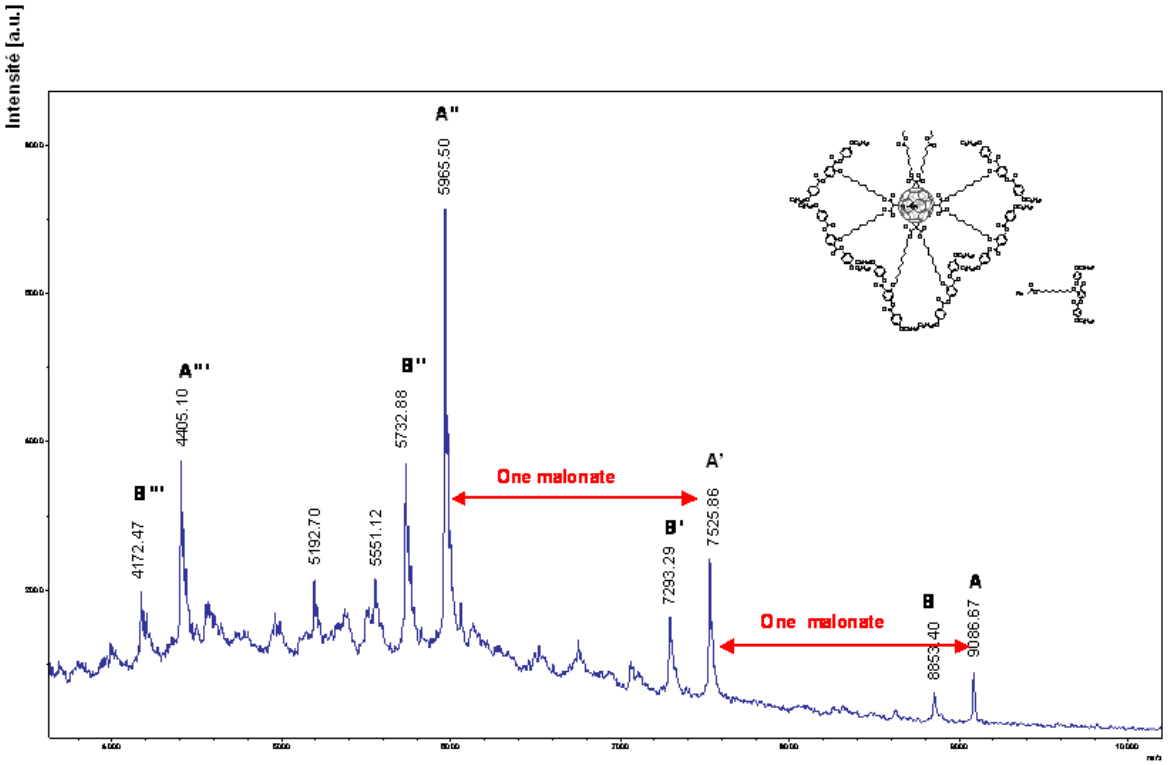


UV-visible spectrum (CH_2Cl_2) of [5:1] [60]Fullerene hexakisadduct **3**



Maldi-tof spectrum of [5:1] [60]Fullerene hexakisadduct **3**

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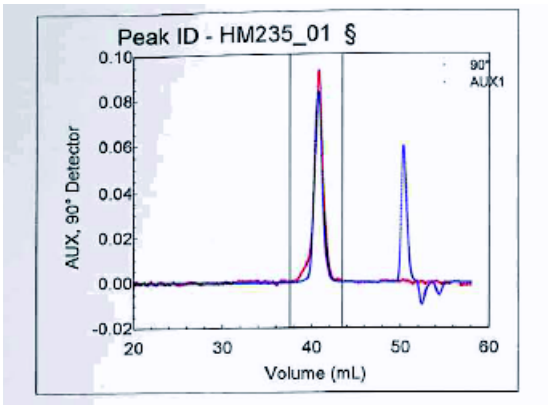
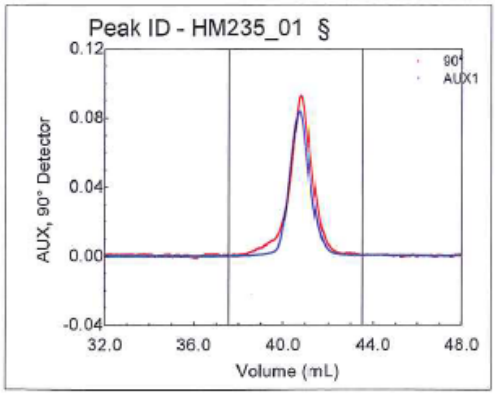




RESULTS

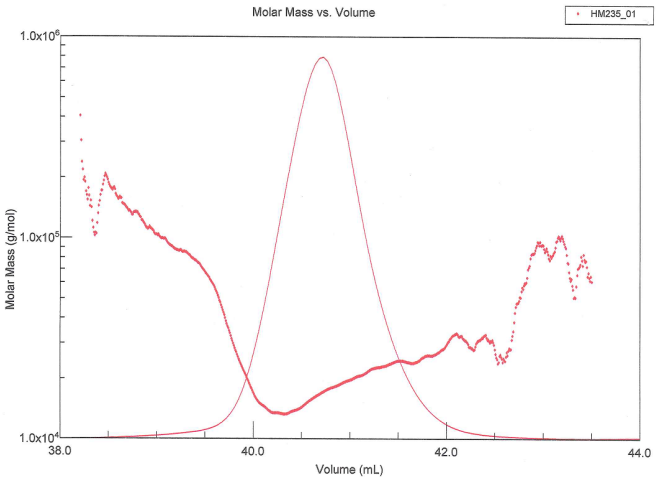
		PEAK #1
Volume (mL)	:	37.550 - 43.500
Slices	:	715
A2 (mol mL/g²)	:	0.000e+00
Fit degree	:	0
Injected Mass (g)	:	3.3000e-04
dn/dc (mL/g)	:	0.152
Polydispersity(Mw/Mn)	:	1.096±0.013 (1.2%)
Polydispersity(Mz/Mn)	:	1.457±0.084 (6%)

Molar Mass Moments (g/mol)

Mn	:	1.756e+04 (0.7%)
Mw	:	1.925e+04 (1.0%)
Mz	:	2.560e+04 (5%)

R.M.S. Radius Moments (nm)

Rn	:	0.0 (0%)
Rw	:	0.0 (0%)
Rz	:	0.0 (0%)



GPC (THF) of [5:1] [60]Fullerene hexakisadduct **3**

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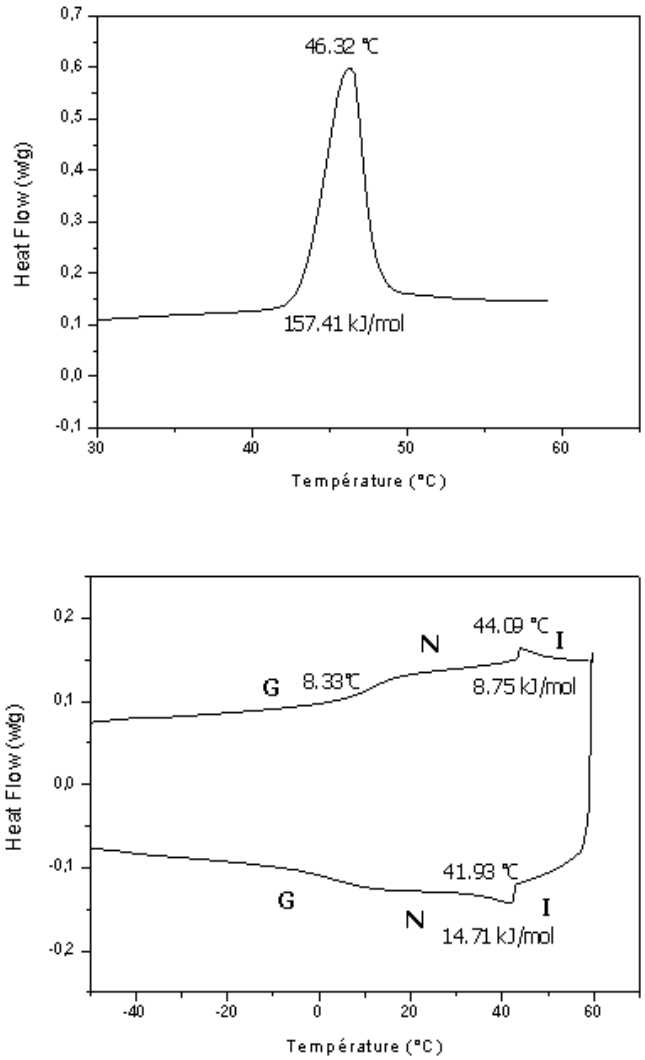

DSC curves obtained for [5:1] [60]fullerene hexakisadduct **3**: top: first heating, bottom: second heating-cooling cycle. G = glass, N = nematic phase and I = isotropic phase.

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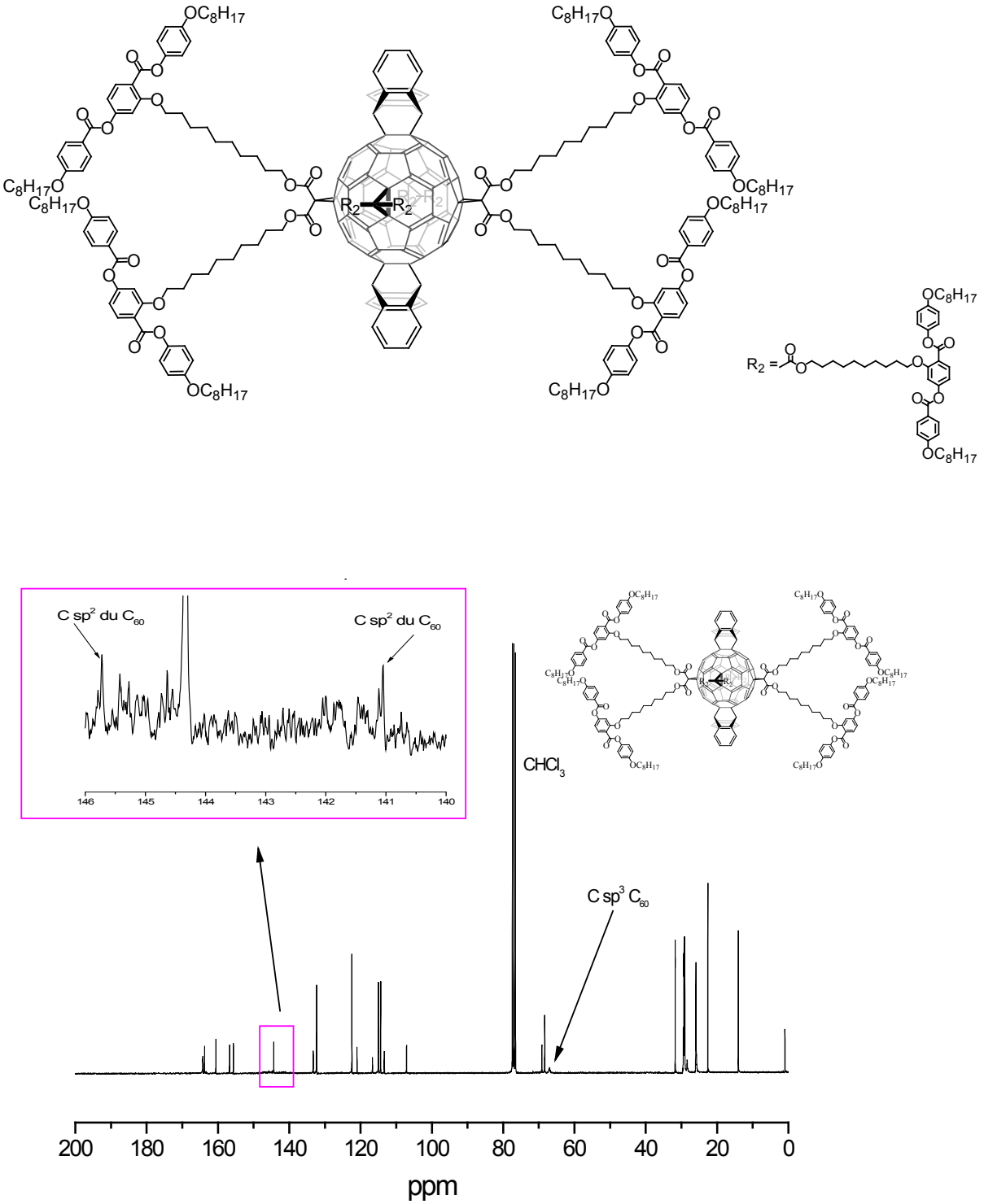

^{13}C NMR spectrum ($CDCl_3$, 75 MHz) of [4:2] hexakisadduct **4**

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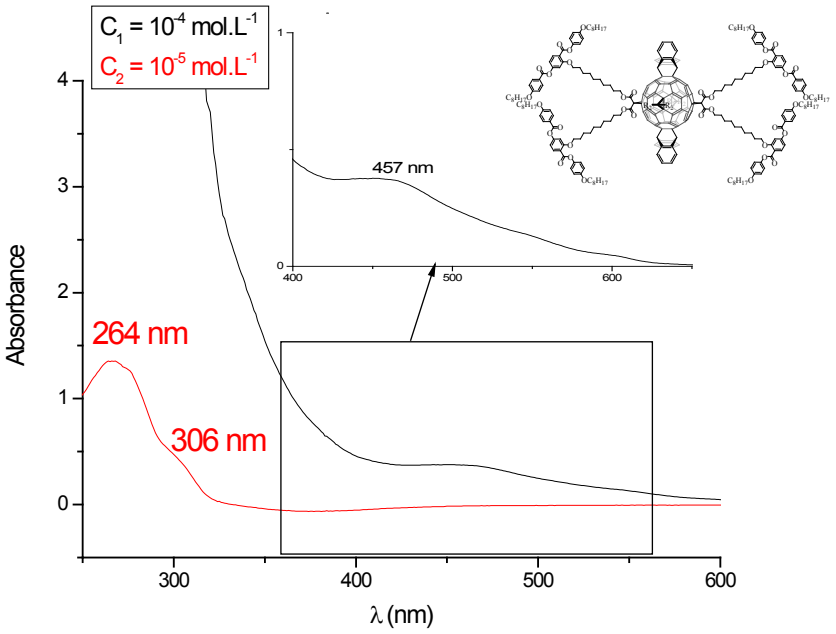
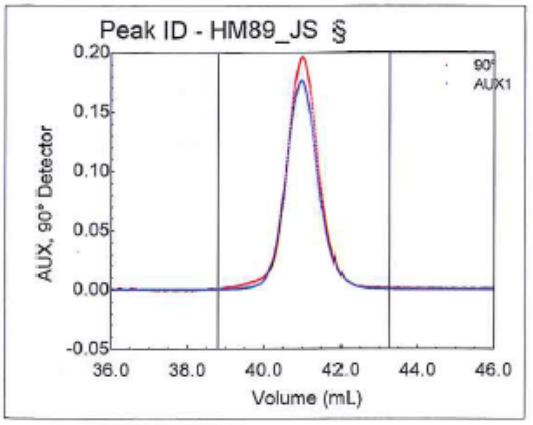
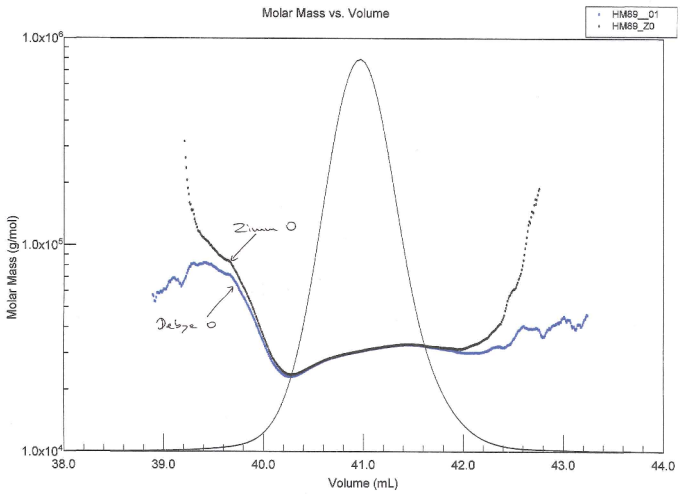


UV-visible spectrum (CH_2Cl_2) of [4:2] hexakisadduct **4**



RESULTS

		PEAK #1
Volume (mL)	:	38.808 - 43.242
Slices	:	533
A2 (mol mL/g²)	:	0.000e+00
Fit degree	:	0
Injected Mass (g)	:	3.6200e-04
dn/dc (mL/g)	:	0.154
Polydispersity(Mw/Mn)	:	1.018±0.014 (1.4%)
Polydispersity(Mz/Mn)	:	1.057±0.044 (4%)
Molar Mass Moments (g/mol)		
Mn	:	3.003e+04 (0.9%)
Mw	:	3.058e+04 (1.1%)
Mz	:	3.174e+04 (4%)
R.M.S. Radius Moments (nm)		
Rn	:	0.0 (0%)
Rw	:	0.0 (0%)
Rz	:	0.0 (0%)



GPC (THF) of [4:2] [60]Fullerene hexakisadduct **4**

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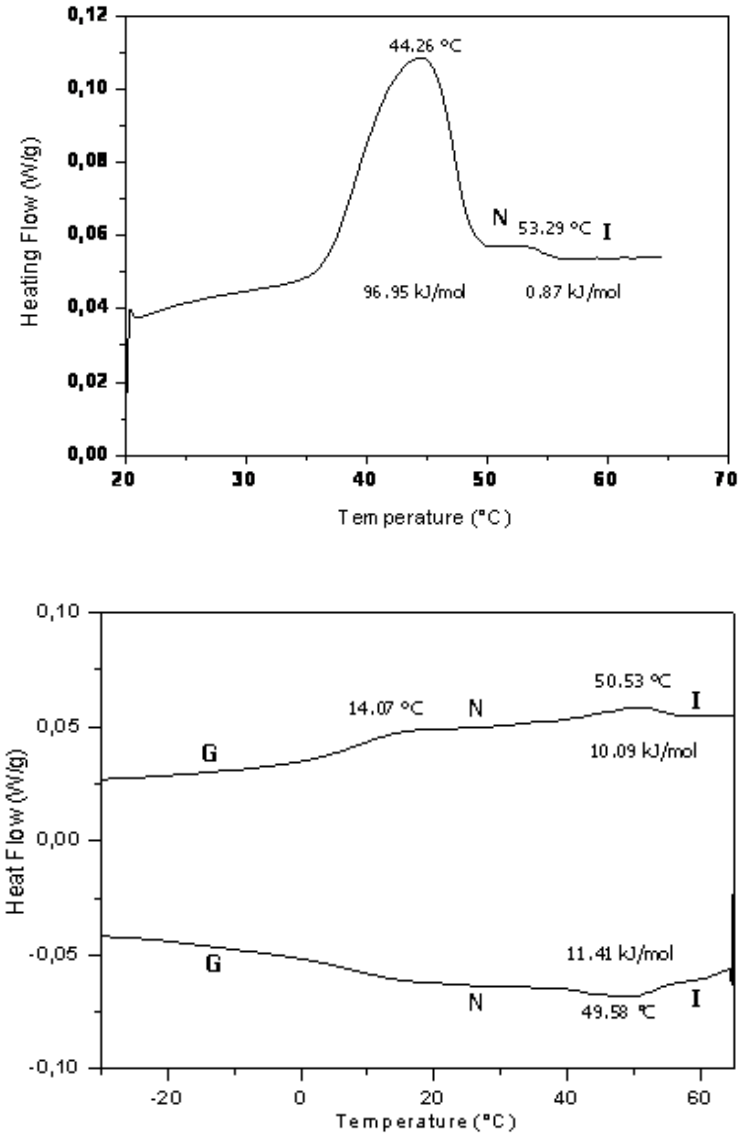

DSC curves obtained for [4:2] hexakisadduct **4**: top: first heating, bottom: second heating-cooling cycle. G = glass, N = nematic phase and I = isotropic phase.