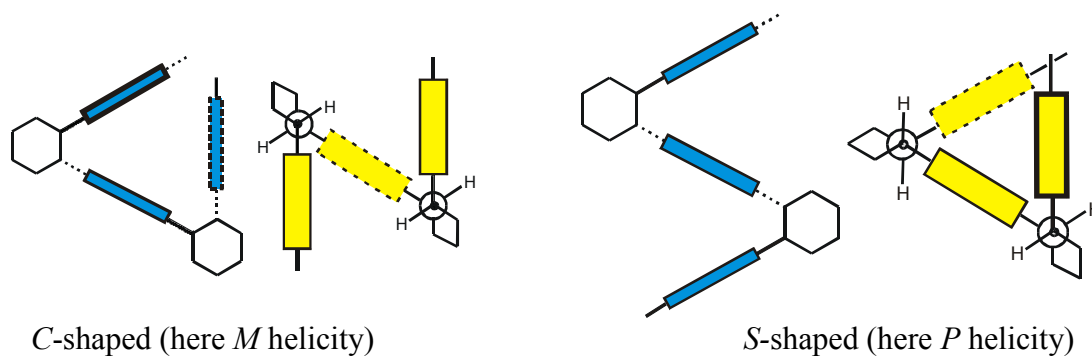
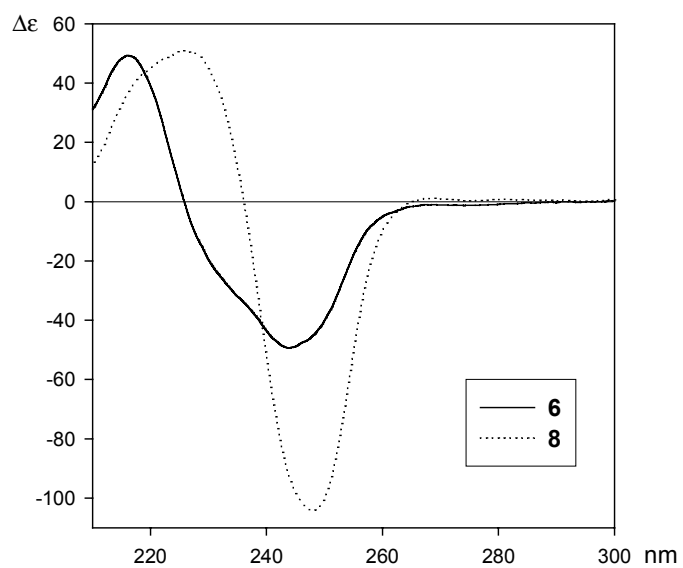

Folding of Aromatic Oligoimides of *trans*-1,2-Diaminocyclohexane

Jacek Gawroński, Krystyna Gawrońska, Jakub Grajewski, Karol Kacprzak and Urszula Rychlewska



These oligomers have fixed (*R,R*) chirality
but fold to either *M* or *P* helical conformers



CD spectra of bis-diimides **6** and **8** in dioxane solution

Selected data (^1H NMR at 300 MHz in CDCl_3 solution)

- 1** m. p. 342-344 °C; ^1H NMR 1.55 (m, 6H), 1.90 (m, 6H), 2.44 (m, 4H), 4.97 (m, 4H), 7.5-8.2 (broad, 10H); FAB HRMS: exact mass calculated for $\text{C}_{38}\text{H}_{31}\text{O}_8\text{N}_4$ (M+1) 671.2142, found 671.2112
Donor-acceptor crystals of **1** are obtained by crystallization of **1** with excess donor from hexane solution.
1- benzene (1:2): colorless crystals, m. p. ca. 190 °C (dec), then 342-348 °C
1- pyridine (1:2): colorless crystals, m. p. ca. 155 °C (dec), then 340-343 °C
1- 1,5-dimethoxynaphthalene (1:1): orange crystals, m. p. 238-241 °C
- 2** m. p. > 360 °C; ^1H NMR 1.52 (m, 9H), 1.91 (m, 9H), 2.44 (m, 6H), 4.95 (m, 6H), 7.5-8.3 (broad, 12H); MS (FAB) $m/z = 967$ (M^+)
- 3** m. p. > 360 °C; ^1H NMR 1.55 (m, 12H), 1.90 (m, 12H), 2.45 (m, 8H), 4.95 (m, 8H), 7.5-8.3 (broad, 14H); MS (FAB) $m/z = 1264$ (M^+)
- 4** m. p. 126-128 °C (p-TsOH salt: m. p. 253-256 °C); ^1H NMR 1.0-1.6 (m, 6H), 1.85-1.95 (m, 4H), 2.04 (m, 1H), 2.1-2.3 (m, 1H), 3.41 (m, 1H), 3.8 (m, 1H); IR (KBr) 2937, 2864, 1758, 1709, 1392, 713 cm^{-1}
- 6** m. p. 233-236 °C; ^1H NMR 1.30 (m, 3H), 1.57 (m, 2H), 1.70 (m, 3H), 1.9-2.2 (m, 6H), 2.15 (m, 2H), 2.45 (m, 2H), 4.11 (m, 1H), 5.01 (m, 2H), 7.5-8.2 (broad, 6H); FAB HRMS: exact mass calculated for $\text{C}_{30}\text{H}_{28}\text{O}_6\text{N}_3$ (M+1) 526.1978 found 526.1956
- 7** m. p. > 360 °C; ^1H NMR 1.2-1.4 (m, 3H), 1.5 (m, 4H), 1.72 (m, 3H), 1.8-2.0 (m, 10H), 2.15 (m, 2H), 2.46 (m, 4H) 4.12 (m, 1H), 4.95 (m, 4H), 7.5-8.3 (broad, 8H); FAB HRMS: exact mass calculated for $\text{C}_{46}\text{H}_{40}\text{O}_{10}\text{N}_5$ (M+1) 822.2775 found 822.2773