

Abstract Submitted
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Synthesis and Self-Assembly of Amphiphilic Protoporphyrin-Based Oligomers¹ JIANJUN MIAO, LEI ZHU, Institute of Material Science and Department of Chemical, Materials and Bimolecular Engineering, University of Connecticut, Storrs, CT 06269-3136 — An amphiphilic discotic molecule based on asymmetric protoporphyrin has been synthesized by attaching two triethylene glycol monomethyl ether (TEG) chains to the two vinyl groups in protoporphyrin via bromination and etherification, followed by attaching two octadecylamine (ODA) chains to the two carboxylic acid groups in protoporphyrin via amidization. The purity of the sample was verified by ¹H NMR, size-exclusion chromatography, and mass spectroscopy. Self-assembly in the solid state was studied by differential scanning calorimetry and X-ray diffraction (XRD). A broad melting peak was observed at ca. 100 degC, and a weak ordering was observed by XRD. Self-assembly in selective solvents was studied by dynamic light scattering and transmission electron microscopy. Large vesicles of 120 nm with a narrow distribution were observed.

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