

Supramolecular Porphyrin Polymerization through
Charge-Transfer Host-Guest Interaction

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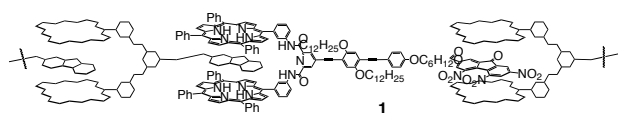


Figure 1. Supramolecular porphyrin polymer formed by charge-transfer host-guest interactions.

We have found that a bisporphyrin form unique CT complex with an electron deficient guest.^{1,2)} Heteroditopic bisporphyrin **1** was synthesized.³⁾ **1** assembled to form the supramolecular polymers in organic solution and in the solid state. Diffusion coefficients of **1** decreased as increasing its concentrations, suggesting that the supramolecular polymers were formed. Viscometry of a solution of **1** confirmed that sizable supramolecular polymeric chains were formed, and were entangled. SEM and AFM measurements of **1** supported that the polymeric chains generated widely spread networks that are commonly observed in conventional polymer networks.

1) Haino, T. et al., *Y. Tetrahedron Lett.* **2005**, 46, 257.

2) Haino, T. et al., *Y. J. Org. Chem.* **2006**, 71, 2572.

3) Haino, T. et al., *Angew. Chem. Int. Ed.* **2012**, 51, 1473.