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**Hierarchical Structure from the Self-Assembly of Giant Gemini Surfactants in Condensed State** HAO SU, ZHAO WANG, YIWEN LI, STEPHEN CHENG, Department of Polymer Science, the University of Akron — In the past a few years, a new class of amphiphiles with both asymmetrical shapes and interactions named “shape amphiphiles” has been significantly intensified. Recently, a new kind of shape amphiphiles called “Giant Gemini Surfactants” consisting of two hydrophilic carboxylic acid-functionalized polyhedral oligomeric silsesquioxane (APOSS) heads and two hydrophobic polystyrene (PS) tails covalently linked via rigid spacers (*p*-phenylene versus biphenylene) has been successful behavior of giant gemini surfactants. We currently continue to investigate the spacer effects on the self-assembly behaviors of giant gemini surfactants in condensed state by utilizing DCS, SAXS and TEM. Preliminary results showed that giant gemini surfactants with different spacers have diverse phase behaviors. As we use the same 3.2k PS chains, the giant gemini surfactant with *p*-phenylene spacer showed double gyroid morphology, while the one with biphenylene spacer revealed cylindrical morphology. This study expands the scope of giant gemini surfactants and contributes a lot to the basic physical principles in self-assembly behavior.

Hao Su  
Department of Polymer Science, the University of Akron

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