Exploiting Phenyl Embraces and π-stacking in the Assembly of Supramolecular Arrays of Tetraphenylphosphonium and *p*-sulfonatocalix[n]arene (n=4,6,8)

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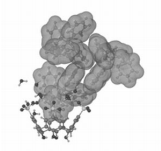
The interactions between Ph_4P^+ cations and *p*-sulfonatocalix-[n]arene anions offer the possibility of building up new materials based on interactions between the anions and cations beyond their electrostatic attraction, such as the possibility of a phenyl ring of the cation residing in the cavity of the calixarene. In developing this concept, we have embarked on a systematic study of the ability of the Ph_4P^+–*p*-sulfonatocalix[n]arene system to generate extensive self-assembled arrays. We report herein the formation of materials built up from Ph_4P^+ cations and different sizes calix[n]arenes with n = 4 (see Figure), n = 6 and n = 8.



[1] Makha M., Raston C. L., Sobolev A. N., White A. H., *Chem. Commun*., 2004, **9**, 1066. [2] Makha M., Raston C. L., Sobolev A. N., White A. H., *Chem. Commun*., 2005, *in press*.

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