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Stacking of Semiconductor Molecules Enforced Through Hydrogen Bonding. Anatoliy N. Sokolov, Leonard R. MacGillivray, Dept. of Chemistry, The Univ. of Iowa, Iowa City IA, 52242-1294.

In this presentation we describe a rational approach to direct the formation of face-to-face dimeric stacks of semiconductor building block (SBB) molecules (*J. Am. Chem. Soc., in press*). The approach involves the functionalization of SBBs, namely 2,5-bis(4-pyridylethynyl)thiophene or 9,10-bis(4-pyridylethynyl)anthracene, with hydrogen bond acceptor sites. The subsequent co-crystallization of the SBB with a semiconductor co-crystal former (SCCF), in the form of a resorcinol derivative, results in the formation of hydrogen-bonded molecular assemblies in which the SBBs exhibit face-to-face π-stacked arrangements. The crystal structure of the pure compounds and related co-crystals will be reported and discussed in the context of engineering solids that exhibit efficient charge-transport properties.