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**Manipulating functional properties at the interface of composite organic semiconductors** PANAGIOTIS MANIADIS, TURAB LOOKMAN, AVADH SAXENA, DARYL SMITH, Los Alamos National Laboratory — The formation of interfaces between different conjugated polymers is very important for the function of organic solar cells and other organic semiconductor devices. We propose a mechanism to control the properties of these interfaces with the addition of specially designed macro-molecules, with functional units. We develop the framework, using self consistent field theory (SCF), to study the concentration and the correlation function related to these functional units. When the functional units include a dipole moment, the average dipole moment and the standard deviation is expressed as a function of the SCF propagators. For electrostatic dipoles we also calculate the electric field difference created by the dipoles, as well as the charge distribution.

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