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2d Assembly and solvation of supramolecular ionic polymers JANICE REUTT-ROBEY, QIAN SHAO, LEVAN TSKIPURI, University of Maryland, DAISUKE TAKAJO, Osaka University — Supramolecular polymers are important building blocks for functional nanomaterials. The structural fidelity of soft (noncovalent) species during transfer from the solution phase to a solid substrate is an important issue for material design. We report on the 2d structures of supramolecular ionic polymer chain structures consisting of the ionic solutes C186H244B3IrN6O12 (+3) (twin bowl) and IrN6C30H24 (-3). In solution, these ionic solutes assemble into supramolecular chain-like structures, with lengths averaging 20 nm. Deposition onto an Ag(111) substrate by a liquid microaerosol source yields 2d islands of the ionic polymers embedded in a thin film of the solvent, CH3Cl. Molecularly resolved UHV-STM images reveal in tact transfer of the supramolecules with size distributions comparable to the solution phase. Solute ion attachment/detachment from the supramolecular chain ends occurs, facilitated by the bounding solvent layer. Solvent-solute islands adopt striking geometric shapes and these structures are discussed in terms of 2-d solvation energies. This work was supported by the National Science Foundation under CHE-MSN Grant CHE1310380.

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