Abstract Submitted
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Enhanced transport in metallic particle modulated organic field-effect transistors[1] YU CHEN, MASAYA NISHIOKA, ALLEN GOLDMAN, School of Physics and Astronomy, University of Minnesota, YU XIA, DANIEL FRISBIE, Department of Chemical Engineering and Material Science, University of Minnesota — Modulated organic field-effect transistors (FET) of rubrene were made by laminating organic single crystals on the top of two-dimension quantum dots arrays. By introducing the single crystal under-layer dots arrays, we were bale to effectively separate organic crystals into mesoscopic-sized grains and reduced the density of trapping sites. Comparing with the conventional organic FETs, these structures show an enhanced mobility at low temperature. This was exhibited as a sharp increase in motilities when temperature decreased below a characteristic temperature.

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