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**The Directed-Assembly of CdS Interconnects between Targeted Points in a Circuit** BRET N. FLANDERS, BIROL OZTURK, ISHAN TALUKDAR, Oklahoma State University, Department of Physics, 145 Physical Sciences, Stillwater, OK 74078 — A central goal in device-assembly is the development of methodology for fabricating targeted structures from nanoscopic building blocks, in a manner that embraces directed-assembly. Here we demonstrate the one-step dielectrophoretic assembly and interfacing of individual interconnects from populations of 3.7 nm CdS nanoparticles between targeted points in a circuit, shedding light on the most probable mechanism by which this occurs. We further show that the nanoparticles fuse into bulk CdS during the fabrication process. This finding is significant because it establishes a preliminary basis for the fabrication of structurally continuous semiconducting interconnects from nanoscopic building blocks.

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