

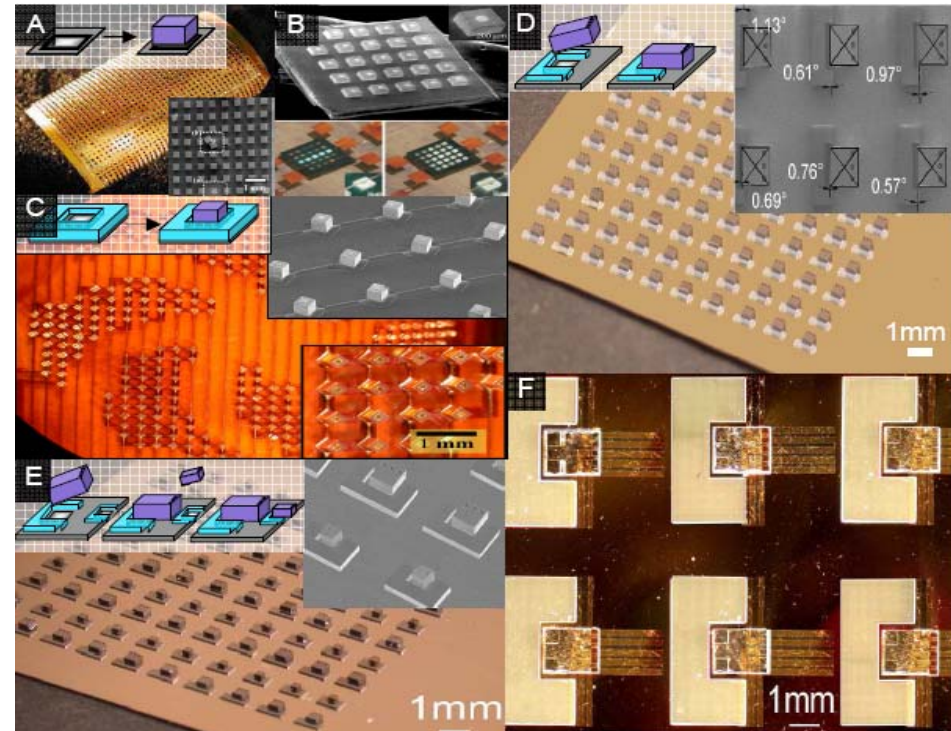
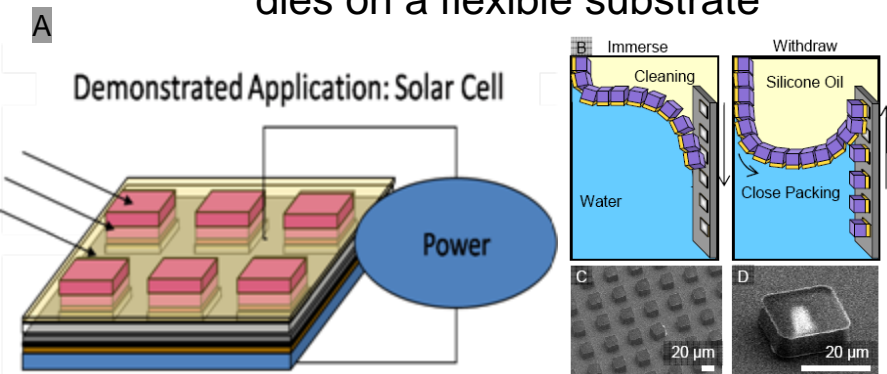
Engineered Fluidic Self Assembly from Nano to Micro

Heiko O. Jacobs (PI), Robert J. Knuesel

Electrical and Computer Engineering, University of Minnesota

I DESCRIPTION OF WORK

- ◆ Fluidic surface-tension directed the self-assembly of miniaturized semiconductor dies across length scales and 3D topologies
- ◆ Integrated single-crystal semiconducting silicon solar cell dies on a flexible substrate



I Publications

- ◆ Robert J. Knuesel and Heiko O. Jacobs, "Fluidic Surface-Tension-Directed Self-Assembly of Miniaturized Semiconductor Dies Across Length Scales and 3D Topologies," Mater. Res. Soc. Symp. Proc. (2009).
- ◆ Robert Knuesel, Shameek Bose, Wei Zheng and Heiko O. Jacobs, "Engineered Solder-Directed Self-Assembly Across Length Scales," Mater. Res. Soc. Symp. Proc. (2007).
- ◆ Robert Knuesel, Shameek Bose, Wei Zheng and Heiko O. Jacobs "Angular Orientation-Specific Directed Self-assembly and Integration of Ultra Small Dies", NSTI Proc. (2007).

I MAJOR OBSERVATIONS

- ◆ Dies can be assembled and integrated at discrete locations on a substrate with unique orientation
- ◆ Surface treatment can be employed to direct self assembly at an interface