Scalable Nanomanufacturing of Nanowire-Base Sensing Systems from Integrating Flow-Guided Assembly and Synthesis (1130468)

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Manufacturing Nanowire-based Sensing Systems

Proposed Nanowire-based Sensor/Sensing Systems of this Project

Air Blowing Nanowire Manufacturing with Microchannel Array Templates

Schematic of Microchannel Air Blowing Nanowire Manufacturing

Before After

Wire

PDMS Mold

Electodeposition

Source Drain

Channel

Porous template

Depost/conductive seed layer

Electodeposition

DNA nanowire

Air Blowing

microchannels

Concentration Effect

Evaporation Time Effect

Spatial Variation

Replication Quality

Concentration Effect

Evaporation Time Effect

Spatial Variation

Replication Quality

Acknowledgement

We acknowledge the financial support from National Science Foundation from CMMI under Grant No. 1130468

Publications

(1) Fangfang Ren, Yingbo Zu, Kartik Kumar Rajagopalan, Shengnian Wang, Biomicrofluidics, (2012), 6(4), 044103/1-10.
(2) Kartik Kumar Rajagopalan, Juan Chen, Baiyang Lu, Shengnian Wang, Nanoscale, (2013), 3(1), 1350001/1-9