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## Nanoparticle-based nanofluidics

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### Abstract

Nanofluidics attracts wide interests from fundamental study in nanoscale transportation to real applications in biochemical sensing. Here, we reported a nanoparticle based nanofluidics scheme, where interspace in a nanoparticle crystal has been utilized to fulfil a nano channel network. A doping model was established to explain and predict the ion transportation in a nanoparticle-based nanofluidic device. Different ionic devices, including nanofluidic diode and biochemical sensor, have been developed. An ultra-high sensitivity sensor was also achieved by a recently-developed single nanoparticle nanofluidic device.



#### -About the Speaker-

Associate Professor Wei Wang obtained his Ph.D. at Tsinghua University in 2005 with major in Thermal Engineering (supervised by Prof. Zengyuan Guo). He joined in Institute of Microelectronics, Peking University from 2005 and became an associate professor in 2009. His research topics included micro/nanofluidics, polymer micro/nanofabrication and thermal management in 3D IC. He has published more than 50 peer-reviewed papers.