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Field emission of ZnO microrods array with nanospikes

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ZnO microrods array with nanospikes are fabricated on silicon substrate using thermal chemical vapor transport. The field emission property of ZnO microrods array with nanospikes is characterized. The low turn-on electronic field and the high current density are achieved with ZnO microrods array with nanospikes as the emitters. It is suggested that the special morphology of ZnO microrods array with nanospikes play a crucial role for its excellent field emission property, and well aligned ZnO microrods array with nanospikes can be a promising candidate for an emitter. The growth mechanism of ZnO microrods array with nanospikes can be explained by the combination of vapor–solid (VS) and secondary nucleation processes.

Biography:

Bing Wang received her Ph.D. degrees in materials physics and chemistry from SunYat-sen University in China at 2007. In 2007, she joined Shenzhen University in China as a Lecturer and became Associate Professor of Optoelectronic engineering at 2009. Her research interests include (i) development of new nanomaterials forthe gas sensorapplications, (ii) sensor devices, (iii) micro-fabrication process, (iv) vacuummicro/nanoelectronics, and (v) optical characteristics of nanomaterials.