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**Field Emission of Silicon Nanowires** BAOQUING ZENG, Boston College, MA, GUANGYONG XIONG, Boston College, MA, SHUO CHEN, Boston College, MA, SUNG-HO JO, Boston College, MA, WENZHONG WANG, Boston College, MA, DEZHI WANG, Boston College, MA, ZHIFENG REN, Boston College, MA — Field emission of silicon nanowires (SiNWs), which were grown by chemical vapor deposition method with Au catalyst at a temperature of 480 C from silane, has been investigated. To obtain a current density of 1 mA/cm<sup>2</sup>, an electric field of 5.5 V/um is needed with a turn-on electric field of 2.9 V/um for a current density of 0.01 mA/cm<sup>2</sup>, which are the best ever reported values. The NWs were studied by scanning electron microscopy (SEM) and transmission electron microscopy (TEM). SEM showed that the length of the wires is about 100 um with diameters of around 100 nm. High-resolution TEM showed that the nanowires have high crystallinity. The low growth temperature makes the process applicable to glass substrates that are used as the backing of large area flat panel displays.

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