GaN nanowires and single-walled nanotubes

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**Description:**

A transition metal substituted, amorphous mesoporous silica framework with a high degree of structural order and a narrow pore diameter distribution (±0.15 nm FWHM) was synthesized and used for the templated growth of GaN nanostructures, such as single wall nanotubes, nanopipes and nanowires. The physical properties of the GaN nanostructures (diameter, diameter distribution, electronic characteristic) can be controlled by the template pore diameter and the pore wall chemistry. GaN nanostructures can find applications, for example, in nanoscale electronic devices, such as field-emitters, and in chemical sensors.

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