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## Synthesis of $\beta$ -SiC nanowires by Catalytic Chemical Vapor Deposition

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Cubic silicon carbide (SiC) nanowires in bulk quantity were synthesized by a simple and novel method. They were grown on silicon (Si) substrate under  $H_2/CH_4$  atmosphere by catalytic chemical vapor deposition at a much low temperature, 1100 °C. Si wafer was used as silicon source and substrate. A mixture of gallium metal, gallium nitride powder, and iron were used as catalyst. The growth morphology and structure of SiC nanowires were characterized by SEM, HRTEM, XRD, and Raman spectroscopy. The nanowires have a diameter of ranging 20~60 nm and a length up to tens of micrometers. The growth direction is [111]. The nanowires consist of a crystalline SiC core with a thin amorphous silicon oxide shell layer.