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## **Evidence for the early nucleation of single-walled carbon nanotubes**

In situ optical emission spectroscopy(OES) was used to investigate the spatial and temporal evolution of the electron temperature( $T_e$ ) of laser induced plasmas in the laser-furnace method of synthesizing single-walled carbon nanotubes (SWCNTs). The intensities of the spectral maps of  $T_e$  showed a strong temperature dependence. The frequency of sharp fluctuations which appear as hot spots in the spectral maps of  $T_e$  increased as the furnace temperature was increased from 1073 K to 1273 K.

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