

## **【NI-08】**

# **Studies on catalytic effect on the growth rate and structure of carbon nanotubes grown by chemical vapor deposition of acetylene at 900-1000 ℃.**

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Carbon nanotubes(CNTs) are synthesized vertically on alumina substrates by thermal chemical vapor deposition of acetylene. The effect of iron(Fe), cobalt(Co), and nickel(Ni) catalysts on the growth of CNTs has been compared over the temperature range of 900-1000 ℃. The growth rate, diameter and crystallinity of CNTs are strongly dependent on the catalysts. The increase of growth rate and crystallinity has been observed for three catalysts. The degree of crystalline increases more significantly with the temperature in the case of Co and Ni catalysts compared to that of Fe catalyst. The results can be explained in terms of the diffusion energy of carbon in the bulk.