

## Chemical vapor deposition of long vertically aligned carbon nanotubes by external control of catalyst composition (CNMS IDR send it to Larry Dickens)

### **Disclosure Number**

200501501

### **Technology Summary**

This invention disclosure describes a method for continuous growth of long vertically aligned carbon nanotube arrays. For most commercial applications it is of great importance that the carbon nanotubes be as long as possible. Currently vertically aligned carbon nanotube growth terminates after a few hundred micron thickness. The origin and the mechanism of this growth termination is not understood. This invention describes a novel method of catalyst application that increases the as grown carbon nanotube length in vertically aligned arrays to 1 cm. These carbon nanotubes have 4 to 10 walls and are known as multi wall nanotubes. There is no reason to believe that this method is limited to multi wall nanotubes. Under certain conditions the material contains a small fraction of single wall carbon nanotubes. But these arrays contain only a few hundred micron long nanotubes.

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