

Glucose derived carbon nanostructures and their applications**Dr. M. Eswaramoorthy****Associate Professor, Chemistry and Physics of
Materials unit, JNCASR, Bangalore, India****日時: 2011年3月11日(金) 15:00-16:30****会場: 東京大学工学部5号館 3F 談話室(341号室)****要旨**

Most of the carbon based nanomaterials are synthesized by pyrolytic decomposition of hydrocarbons and organometallics. Such high temperature routes often end up being highly graphitic but poorly functionalized. However, there are a number of applications where the robust graphitic structure may not be as essential as the functionalized surfaces, in which case the high temperature synthetic routes can comfortably be circumvented. A sweeter alternative was to use 'glucose', a commonly available, non-toxic, inexpensive carbohydrate as the carbon precursor. Glucose under hydrothermal treatment undergoes a polymerization reaction to form amorphous carbon spheres. Carbonization of glucose within an anodic alumina membrane under hydrothermal conditions yields amorphous carbon nanotubes. The most significant outcome of this method is that the surface of the carbon material is highly functionalized with hydroxyl and carboxylic acid groups. We have attempted to exploit the glucose derived carbon nanostructures for template based materials synthesis, and drug delivery.

