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Abstract Book

Synthesis Of Carbon Nanotubes By CVD on a Shungite Substrate

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CNTs have unique electronic properties, which can be used to make nanoelectronic devices such as transistor, lithium ion batteries and they have excellent field emission properties such as low emission threshold, high emission current density, and high stability. So it can be used to make high performance flat panel display. CNTs as composite fiber reinforcement can be expected to exhibit excellent strength, fatigue resistance and elastic, isotropic properties. In addition, CNTs have outstanding adsorption properties, such as high efficient hydrogen storage. These specific properties indicate that CNTs have broad application prospects in many areas.

Among several techniques of CNT synthesis available today, chemical vapor deposition (CVD) is most popular and widely used because of its low set-up cost, high production yield, and ease of scale-up.

Carbon nanotube composites were grown by one-step ambient pressure CVD. In our study, we use a catalytic CVD. The growth process was performed via the catalytic decomposition of propane-butane gas mixture on a shungite substrate with a previously prepared catalyst. High purity propane-butane gas mixture was selected as carbon source. In other experiments, hydrogen used as a reducing agent, in this case, as a reducing agent served carbon that is contain shungite.