The Preparation and Characterisation of Nanocarbon Material Synthesized by Detonation

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Detonation nanodiamond(DND), detonation nanographite(DNG) and detonation polycrystaline diamond (D-PCD) are three main kind of ultrafine carbon material synthesized by detonation method. On account of the difference in carbon source explosives sort,charging manner etc., the products possess different properties, in Which about DND has been investigated for 2 decades or more, it has distinct properties of narrow particle size distribution -less than 100*nm* and spherical shape (Figure 1). DNG has similar size and shap with DND and super high specific surface over 1000m^2/g especially (Figure 2). D-PCD has anomalous shap and relative wide size distribution from 1nm to 15μm. By means of reforming and grading technology, it can be separate into a series of products with different size and shap (Figure 3). They could meet many kinds of application need, such as polish liquid, lubricant, composite material, biologic and medical material.

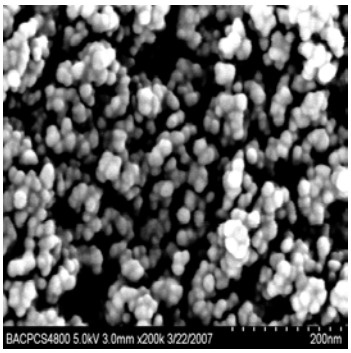

Fig.1. DND

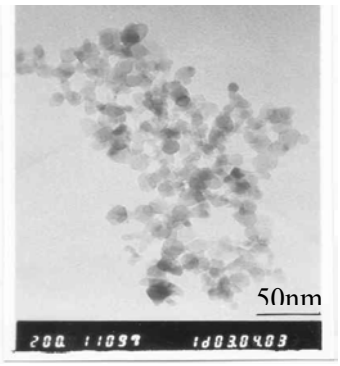

Fig.2. DNG

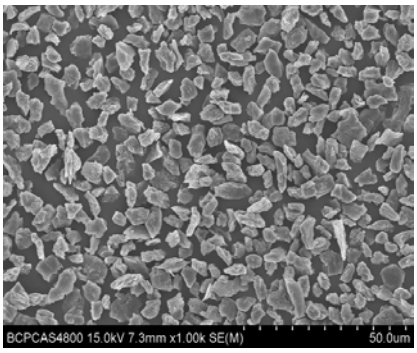

Fig.3. D-PCD