

Morphological studies of bismuth nanostructures prepared by hydrothermal microwave heating. / O. V. Kharissova, M. Osorio, B. I. Kharisov. / Nano Studies. – 2015. – # 11. – pp. 127-142. – eng.

Elemental bismuth nanoparticles and nanotubes were obtained via microwave hydrothermal synthesis starting from bismuth oxide (Bi_2O_3) in the range of temperatures 200 – 220 °C for 10 – 45 min. The formed nanostructures were studied by scanning electron microscopy (SEM) and transmission electron microscopy (TEM). The relationship between reaction parameters and shape of the formed nanostructures is discussed. Molecular mechanics (MM+), semiempiric (PM6) and density functional theory (DFT) B3LYP methods are applied for additional characterization of bismuth nanotubes. Fig. 14, Tab. 6, Ref. 47.

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