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Atomic force microscopy of cobalt nanoparticles with electro-catalytic properties

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Abstract

A method of controlled potential electrodeposition of the cobalt nanoparticles with sizes from 30 to 400 nm on the surface of highly oriented pyrolytic graphite has been developed. The images of nanoparticles were obtained with an atomic force microscope. A computer program was applied to obtain the size distribution of electrodeposited particles depending on the electrodeposition potential, electrolytic concentration, and deposition time. Using voltammetry it has been established that the cobalt nanoparticles with the diameter of about 50 nm show the maximal catalytic activity during electro-oxidation of ethanol. © Pleiades Publishing, Ltd., 2009.

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