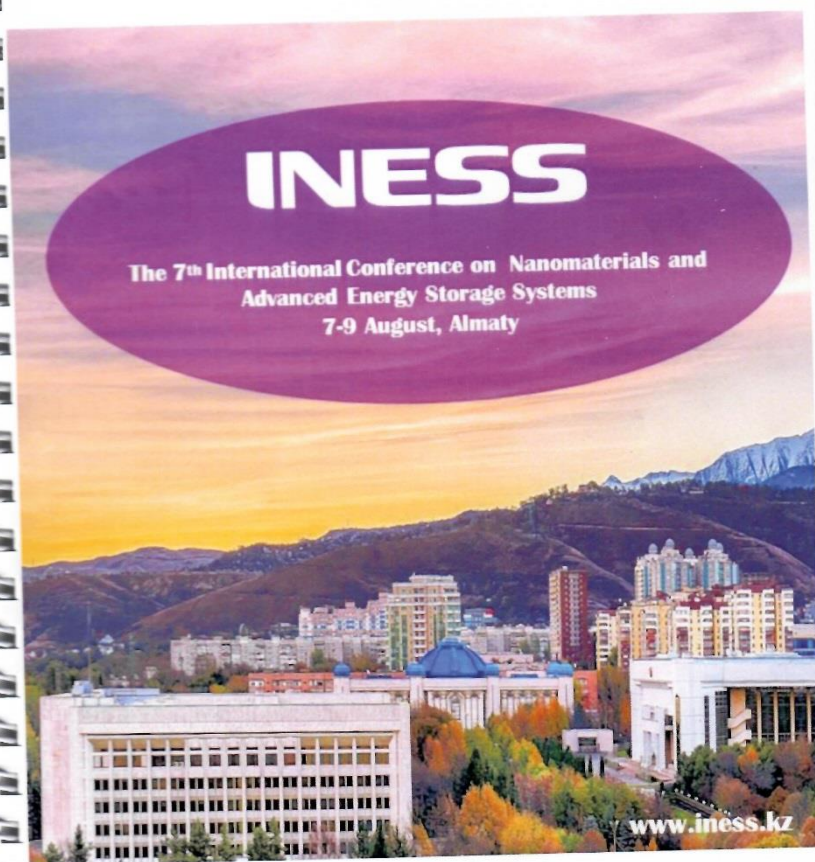


ABSTRACT BOOK



**Almaty, Kazakhstan
2019**

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Carbon nanotubes from polyethylene waste

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Synthetic polymers are widely used in life. Among the various classes of polymer waste, the leading positions are occupied by polyethylene waste.

In present work household garbage was used as an initial source. In the beginning the polyethylene waste was pre-crushed and subjected to cleaning. After washing, the samples were dried.

To investigate the decomposition process, a three-zone CVD-furnace with a quartz tube was used. Thus, it was experimentally determined that at the temperature of 400-450 °C, thermal destruction of the initial polyethylene samples proceeds.

Synthesis of carbon nanotubes was performed by thermal destruction of polyethylene waste. In order to prepare the catalyst cenospheres were impregnated with an aqueous solution of nitrate nickel or cobalt. The temperature of synthesis were set at 800 °C. Nitrogen was applied as a transport gas.

During the synthesis process, Ni/Co nanoparticles on cenospheres demonstrated the best catalytic activity. In that case the content of amorphous phase impurities is minimal, the diameter of carbon nanotubes varies from 40 to 100 nm.

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