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GREEN SYNTHESIS AND CHARACTERIZATION OF GOLD NANOPARTICLES OBTAINED BY A DIRECT REDUCTION METHOD AND THEIR FRACTAL DIMENSION

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Abstract

Nanoparticles are very interesting materials due to their properties which can be different than those of the bulk and they have many applications in various domains, like electronic, catalytic or biomedical. Gold is one of the most studied materials and is used in many applications that will have the human being as recipient, that's why gold nanoparticles should be obtained as environmentally friendly as possible. In this work, particles of around 50 nm were obtained in a so called “green” way by simply adding a solution containing the gold precursor (HAuCl₄) in a tannic acid solution. It was found that the amount of gold added in the tannic acid is directly proportional with the size of the obtained nanoparticles.

Key words: fractal dimension, gold nanoparticles, green synthesis

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