TEM CHARACTERIZATION OF LUTETIUM NANOPARTICLES PRODUCED BY A BIOSYNTHESIS ROUTE

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Nanoscience and Nanotechnology has had a real breakthrough during the latter years mainly due to characterization techniques developed in the electron microscopy realm. Among those, rare earth nanoparticles have been of special interest, mainly due to the optical properties related to their optical activity. In this work Lutetium Oxide nanoparticles were obtained in a high yield by means of biosymthesis with alfalfa. The structures and nanostructures of the particles obtained in the as grown solutions were analyzed by transmission electron microscopy The morphology and crystal structure were characterized by high resolution transmission electron microscopy.EELS and Z-contrast microscopy. It is shown that this method produces small Lutetium nanoparticles, (mainly in the range of 2-5 nm), of Lu2O3, as characterized from the optical diffractograms of individual particles.