

STRUCTURAL CHARACTERIZATION OF NANOPARTICLES BY HRTEM

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In order to determinate the size and structure of clusters, it were examined by transmission electron microscopy and high-resolution transmission electron microscopy. The synthesis of bimetallic nanoparticles has become so important in recent times due to its multi-faceted applications. The relation between the Au/Cu proportions has been demonstrated to affect the size of the particles and the corresponding structures. From the basic structural analysis it is found that the particles were ffc-like, multiple twin or multiple defect particles for the different Au-Cu concentrations. The smallest particles were identified for the Au/Cu sample with 50% of each, and the most crystalline structures were also obtained in the same sample. The concentration of elements in the synthesis directly affects the size and structure of the obtained clusters, while for the AuCu₃ synthesized particles, we obtained the largest clusters with a higher quantity of defects and with a strong influence of the au atoms in the synthesis.