Transmission Electron Microscopy: A Frontier Characterization Technique for Nanomaterials and Nanostructures

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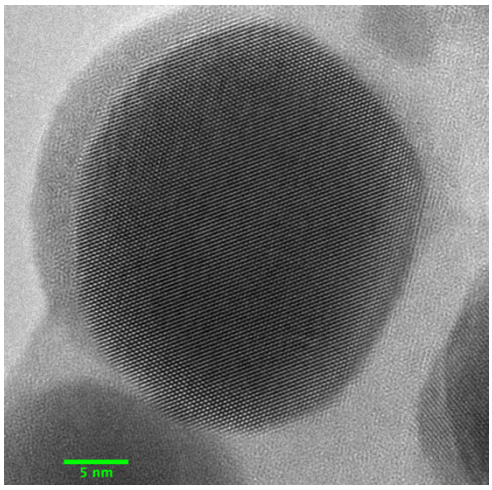
Transmission Electron microscopy (TEM) is one of the most used techniques in the frame of characterization of nanomaterials, allowing to obtain structural and chemical information on nanostructures with high spatial resolution, down to the atomic scale. In this lecture the working principles of TEM techniques will be presented, and specific examples of applications will be shown to clarify their potentials in the study of nanostructures. Moreover, some of the pitfalls associated to High Resolution (HREM) technique will be illustrated outlining its power and inherent difficulties; it will be shown that image interpretation in many cases can be difficult and not straightforward, and the use of image simulation is necessary to get a correct representation of the investigated specimen.



Bibliography

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