

Synchrotron radiation and nanoscience

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The extensive use of synchrotron radiation to study structural and electronic properties of nanostructured systems has proven to be as crucial as microscopy techniques.

Although in general the information obtained cannot be directly visualized in real space, synchrotron techniques are complementary to real space microscopy, and can be used to provide information from large ensembles to single objects.

In this tutorial selected examples of x-ray scattering and x-ray diffraction methods applied to the study of nano-systems ranging from self-assembled organic molecules to quantum dots and nanotubes will be depicted. Special emphasis will be given to the tools available at the Brazilian Synchrotron Light Laboratory (LNLS).