

Dynamic Electronic Interactions at Nanoscopic Scale

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The study of the nuclear electronic environment in matter gives us the knowledge about atomic scale phenomena and, consequently, a better understanding about the origins of materials' macroscopic features.

The existence of dynamic interactions at the nanoscopic scale is verified in the most varied areas, being Perturbed Angular Correlations (PAC) a perfect tool of choice to study such phenomena because of its sensitivity to local charge distributions in time at the atomic level (namely by measuring the electric field gradient).

A brief presentation of slow electronic recovery processes after electron capture decay or decay by conversion electrons giving origin to variations in the electric field gradient at the nuclear site will be done, as well as a demonstration of how PAC is a very suitable technique to study these kind of dynamic phenomena.