



*Nanoscienze & Nanotecnologie
& Strumentazione*

Seminario

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*Titolo:
“Advanced Characterization Techniques for Clean
Energy Materials”*

Aula Seminari Dipartimento di Scienze Tecnologie Chimiche
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Ore 15:30 – 3 dicembre 2012

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Abstract:

Clean energy materials are one of the main object of study of material science. We present here an overview of the results obtained by applying advanced x-ray and neutron scattering techniques for the investigation of the crystal structure of a series of materials for clean energy applications like electrolytes for solid oxide fuel cells (SOFC) and materials for lithium batteries. Most of the examples presented will deal with the determination of the local structure of such materials by means of Pair Distribution Function (PDF) analysis by neutron and/or x-total scattering measurements. In addition other examples will be related to the investigation of selected compounds under conditions as much as possible closer to the real operational conditions of the materials when they operate into a device. Finally, the strength of coupled PDF analysis coupled to computational chemistry tools will be highlighted.