



## Transformation of Nano-Crystalline Oxides by Dense Electronic Excitations\*

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Preliminary experiments [1,2] have shown that the formation of high energy ion tracks in polycrystalline materials would depend on the crystallite size. Backward reflection of ion-emitted electrons on the grain boundaries could cause some energy confinement, responsible for the transformation of the crystallite if it is sufficiently small.

We report on the current observations by electron microscope of nanocrystalline SnO<sub>2</sub> and Fe-Al<sub>2</sub>O<sub>3</sub> nanocomposite, irradiated by GeV heavy ions. We describe the effects on the nano-structure.

[1] K. Izui, J. Phys. Soc. Japan **20** (1962) 1441.

[2] T.S. Noggle, J.O. Stiegler, J. Appl.Phys. **33** (1962) 1726.

\*Ion irradiation performed at the GANIL, Caen, France.