



CEA – Saclay, 91191 Gif-sur-Yvette Cedex

Service de Physique de l'Etat Condensé - UMR 3680

SÉMINAIRE SPECIALISE

Mercredi 10 juillet 2019 à 11h15

Orme des Merisiers SPEC, Salle Itzykson, Bât.774

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Conversion polymorphism in high-pressure stabilized ABO₃ phases:

High-pressure synthesis is a powerful method of production of new metastable materials with original crystal structures and exotic properties. In particular, this method is widely used to obtain perovskite phases since the perovskite structure is very compact and often provides the smallest unit cell volume. In the present work, we report an observation of unusual irreversible phase transformations upon post-synthesis thermal treatment between numerous metastable perovskite phases in the high-pressure stabilized BiFe_{1-y}ScyO₃ series. In this rather simple system, we have revealed at least three compositional ranges where the post-synthesis annealing results in appearance of different perovskite polymorphs with new combinations of structural distortions and magnetic orders. We refer this behaviour as a conversion polymorphism and believe that this is a general phenomenon which can be found in many other systems and can be used to obtain novel materials with interesting properties.

Coffee and pastries at 11h00.

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