

**My research stays at the Institute for chemical research, Kyoto University,
2012/05/14 – 2012/06/15.**

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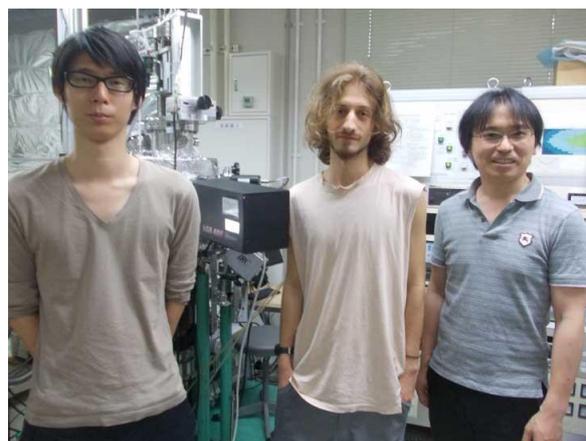
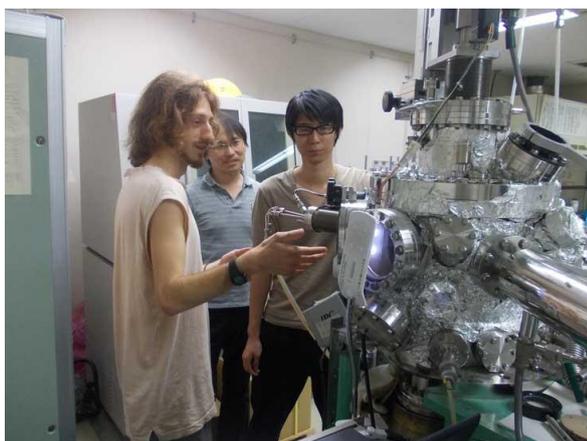
I spent one month with the Prof. Shimakawa group in Institute for Chemical Research, Kyoto University, to perform some experiments for my master thesis thank to the collaboration between the young researchers exchange program of Institute for Chemical Research and the MaMaSELF program.

My main task has been carrying on the deposition of thin films of $\text{SrCoO}_{2.5}$ using different substrates in order to obtain different orientations of the film. The target for the deposition was previously synthesized by me in Montpellier. Thanks to the researchers of the group thorough knowledge on oxides deposition of thin films by Pulsed Laser Ablation and the optima instruments available in the labs, my time here has been very fruitful. We have successfully deposited the non-stoichiometric $\text{SrCoO}_{2.5}$ on SrTiO_3 [100], SrTiO_3 [110], SrTiO_3 [111], Nb-SrTiO_3 [100], Nb-SrTiO_3 [111] and DyScO_3 obtaining four different orientations of the film. X-ray diffraction measurements and reciprocal space mapping allowed us to analyze orientations and lattice parameters

In addition ex-situ XRD oxidation experiments have been performed on the thin films in order to have a first hint about the anisotropy of the oxygen mobility of the system, these data will be compared and integrated with the analysis we are going to perform in Montpellier on the thin films prepared in Kyoto. The samples created and the results obtained in Kyoto university laboratories are crucial for the subject I am dealing with and therefore necessary to complete my thesis.

Other than the good results I've been able to get also knowledge and technical skills in pulsed laser deposition technique and single crystal XRD methods.

I thank very much the Institute for Chemical Research for founding my stay in Japan giving me the possibility to make high quality research and also to get to know Japan both from a touristic and social point of view.



Work on Pulsed Laser Deposition Laboratory