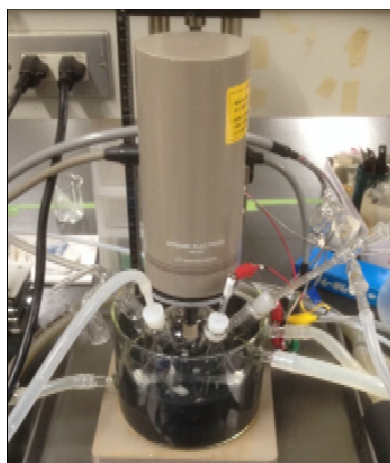


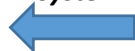
**Research stay at the Institute for Chemical Research, Kyoto University  
Clémenton Damien (University of Montpellier 2, France)  
2015/02 – 2015/03**

Thanks to the collaboration between University of Montpellier 2 and ICR I was able to find an interesting opportunity of an internship in Japan. My project was done in a high-pressure team of the Shimakawa's research group in the Institute for Chemical Research at Uji campus. My stay here was fully supported by the young researchers exchange program.

My work focused on the synthesis of perovskite type  $A'A_3B_4O_{12}$  using high pressure technique. This structure compounds are well known for their remarkable electronic and magnetic properties like colossal magnetoresistance, but the catalytic properties have never been investigated. For this study we made  $Ca_{(1-x)}Y_xCu_3Co_4O_{12}$ . Each sample I made was first analysed by X-ray diffraction and was confirmed to be a single phase. Then the electrochemical activity based on the oxygen reduction reaction using a rotating disk electrode was measured. In addition to the  $A'A_3B_4O_{12}$  we also plan to make other compounds such as  $CaCu_3Ti_4O_{12}$ ,  $CaCu_3Ge_4O_{12}$ ,  $YCoO_3$ , and  $Ca_{0.25}Y_{0.75}CoO_3$  for comparing the catalytic activities.



**Catalytic measurement system**



**High pressure machine**



This was an interesting experience and I learned a lot from the members in the Shimakawa's lab in technical and scientific points of view. I also enjoyed a lot on cultural exchanges. I was really glad to meet all of the people in ICR and also to have the chance to visit Kyoto and so many places in Japan.

For all of this thank you very much.



**Visit at the Fushimi Inari shrine with students**