

## Research visit to the group of the Prof. Yuichi Shimakawa at the ICR, Kyoto University (09-11/17)

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Thanks to the collaboration between my PhD supervisor Prof. Susana García Martín (Universidad Complutense de Madrid) and Prof. Yuichi Shimakawa (ICR), I had the opportunity of enjoying a three months visit in Japan. This visit was established in the short-term exchange program offered by the Ministry of Education, Culture and Sports of Spain and by the ICR.



My work during this period was focused on the stabilization of unusual high valence of Fe in  $(\text{Gd,Ba,Ca})\text{FeO}_{3-y}$  system with perovskite-related structures. This system prepared in air conditions presents different superstructures depending on ratios of Gd, Ba and Ca within the A sites. The oxidation of these compounds through different techniques such as the ozone flowing and the high-pressure technique in presence of an oxidizing agent (i.e.  $\text{KClO}_4$ ) led to increase of the Fe oxidation states above 3+. With those experiments, I could acquire knowledge and expertise in high-pressure synthesis and Mössbauer spectroscopy, and those techniques would be very useful in my future career.

I want to express my sincere gratitude to Prof. Shimakawa for all his guidance and support during the stay. I would also like to thank all the members of the Laboratory for their kind help in all the moments. Personally, this experience allowed me to know a different approach, not only in the scientific area, but also in the culture and way of life of another society.

