

## Returnee's Report

Name :	Yoshihito SHIMONO
Status :	Masters year 2 Nagoya Institute of Technology
Name of Exchange University :	ENSCI/UL
Research Theme :	Study of the electrical properties of lanthanum silicate for application as electrolyte material in IT-SOFC
Duration :	2013/ 8/18~2013/11/15 (90days)
NITECH Faculty Advisor :	Associate Prof. Isao KAGOMIYA
Exchange University Faculty Advisor :	Research Assistant GEFROY Pierre-Marie
<p>Research Theme in detail :</p> <p>&lt;Goal&gt;</p> <p>To investigate the effect of stoichiometry , sintering time and shaping technique on ionic conductivity of lanthanum silicate.</p> <p>&lt;Result&gt;</p> <p>From AC impedance measurement of samples sintered one time and two times, the sintered two times sample had larger ionic conductivity than that of sintered one time sample. It can be explained that the insulating phase at the grain boundary was decreased by sintering two times.</p> <p>According to AC impedance measurement of samples made by isostatic pressing and tape-casting, the sample made by tape-casting had larger ionic conductivity than that of sample made by isostatic pressing. About tape-casting method, the particle size was made smaller by planetary ball-milling before sintering. Therefore, it seems that the sinterability was improved by planetary ball-milling and the insulating phase was not generated.</p> <p>&lt;Achievement&gt;</p> <p>It was found that ionic conductivity was increased by improvement of sinterability.</p>	
<p>About the laboratory I was sent to (number of faculty and students, methods used in research activity):</p> <p>Number of students is about 60. About the style of research, almost all researchers usually start their experiment in earlier morning than Japan. Then, they finish in early evening. Therefore, the time I could do experiment is short and I need to make my</p>	

schedule every day. Additionally, students in the laboratory are divided two parts equivalently into experiment and simulation. So, the laboratory was not overcrowd and I could do my experiment smoothly.

Comments about the workshops and seminars I attended :

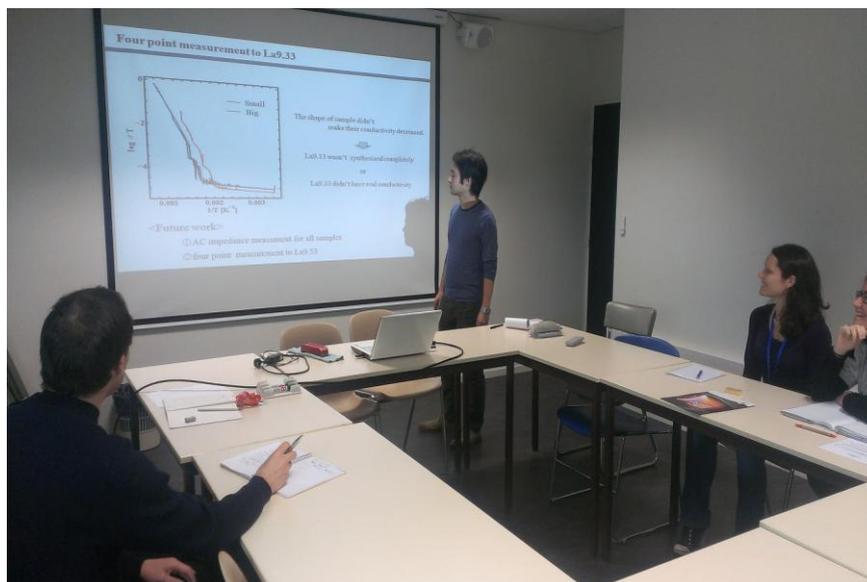
I didn't take part in any workshops and seminars.

My Ambitions :

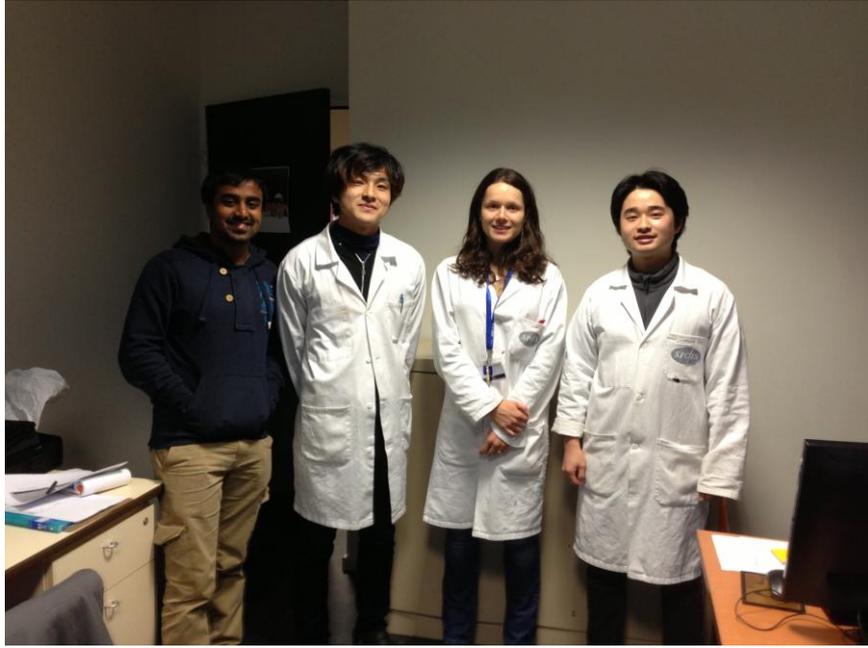
In France, I was coached by doctorate student and research assistant. From these experiences, I learned how to advance my experiment efficiently and consider the results in various views. The time I can stay in my laboratory is short, but I will take advantage of these experiences and write a master report that was considered well.

Advice and suggestions for young researchers who will go to exchange universities :

English is not common language in France and almost all Japanese are not so good speaker of English. Therefore, you will have many misunderstandings in daily life. In such cases, don't hesitate to hear what foreign researcher say until you understand and make efforts to tell your ideas. Then, you will be accepted by them.



Picture 1 . Meeting



Picture 2 . Partner and his roommates



Picture 3 . Roommates