

Lyon 2013 ELYT School

The Associated International Laboratory (LIA) ELYT-Lab was founded in 2008. This laboratory promoted the scientific exchanges and collaborations between the University of Lyon and the University of Tohoku. It led to several scientific projects, papers, workshops and Ph-D double programs.

Besides these actions, from the beginning, ELYT-lab decided to add an important action of training. This action was founded on the academic exchanges programs of master degree already existing between INSA Lyon or Ecole Centrale Lyon and Tohoku University. One of the key points for the development of a long-term partnership between France and Japan is to attract students and convince them to spend long periods in the partner country (18 months for the Master double degree, 1,5 – 3 years for a PhD). Students usually start without prior knowledge of the country. For this reason, it was decided to expand the collaboration between Lyon and Tohoku within Elyt-Lab, to the organization of short duration summer schools dedicated to engineering and doctorate students (undergraduate and graduate students). The project aims at providing opportunities for young Japanese and French students to participate in ELYT-Lab scientific activities, but also to have a first contact with the partner country.

This "ELYT School" is alternately organized in Japan and France with the support of the administrative supervisions, the Rhone Alpes region, the Ministry of Higher Education and Research in France, and the Global Centers of Excellence Program of the Japanese Ministry in charge of education, culture, Sports, Science and Technology (MEXT). Thus, since 2009, every year, a group of twenty students, accompanied by some faculty members, have been to the partner country for ten days.

This year, the fifth edition of the ELYT School became more international. In fact, students from partner universities (KTH, Sweden, Fraunhofer, Germany, Shanghai Jiaotong University, China, Kobe and Tokai, Japan) of Tohoku, INSA and ECL, also joined the program. For most of them it was their first experience in Europe and France. Finally, with eight students from INSA and five from ECL, 33 students participated in the program from September 2nd to 10th 2013 in Lyon. Their academic background is quite diverse (and related to ELYT Lab activities): mechanics, physics, materials, geology, biomedical, aerospace, environment, and electrical (Master or Doctorate level).

In addition to fully participate in the program, Lyon students helped the logistical organization of the school. This greatly enhanced the interaction between the students of the several countries during these 10 days. They will become future ambassadors for ELYT School, and are highly prompted to participate in academic exchange programs and to a future edition of the program in Sendai.

This program was devoted to both scientific and cultural aspects, with visits of laboratories on campus. The general theme was "Energy, Environment and Safety." An important part of the ELYT School was based on presentations of French or Japanese professors (6 in total). The subject of the presentations was chosen to cover the wide spectrum of the origin of students and the theme of Elyt school, which meets the framework of the topics developed by ELYT Lab "Sustainability of Materials for Energy; A Corrosion Engineering Point of View" (Pr. Normand, INSA-Lyon), "Tsunami Disaster Mitigation - Lessons from the 2011 Tohoku Earthquake Tsunami and Perspectives towards Tsunami-Resilient Communities - " (Pr. Koshimura, Tohoku), "Filtration to face the risk of internal erosion in earth dam; Focus on Constrictions" (Pr. Vincens, ECL), "Getting carried away - how fluid mechanics can help manage risk in urban environments" (Pr Perkins, ECL), "Energy and Human Beings; Challenge for the Future" (Pr. Takagi, Tohoku), "Photovoltaic challenges for sustainable development" (Dr. Fourmond, INSA-Lyon). The students also performed, in small groups, a literature project on the school topic in order to think together, exchange, synthesize and present their research on the environment and safety.

To illustrate this year topic, two visits were organized. First, a visit to an installation of the CNR (Compagnie Nationale du Rhône) at Pierre Benite, followed by a lecture and a discussion with an engineer on issues related to dams and how they help save the environment. Then the discovery of the new Confluence district helped raise awareness among students to high environmental quality and positive energy buildings.



French lesson at Halles Paul Bocuse

In addition, the students visited some of the laboratories involved in ELYT-Lab at INSA and ECL: MATEIS, INL, LAMCOS, CETHIL, LTDS, LMFA. It was an opportunity, in addition to seeing some experiments and discussing their issues with French graduate students, to discover the organization of the life in a French laboratory, which is very different from what it is in Japan.



Visit of Lyon

An important social program has been implemented, especially with the help of Student Associations "BEST Lyon" of INSA and the "Japan Club" of ECL, as well as French students participating in the School ELYT. Several parties were organized with games, wine tasting, cheese and French cuisine. Students also participated in the visit of Fourvière and Old Lyon. Two teachers from the "Français Langue Etrangère" (French as a Foreign Language) of INSA took them for a visit to Les Halles Paul Bocuse to practice the language studied during the French lessons. Finally, a trip to Chamonix and Aiguille du Midi gave the students the chance to admire the MontBlanc despite a cloudy weather. On this special day, the president of Tohoku University had joined the group of Elyt School.



Visit of « Aiguille du Midi » at Chamonix

Conclusion:

The ELYT School can be a very good way to attract PhD students (two PhD double program start this year) for the future and thereby to strengthen the special relation/link built between Sendai and Lyon. This summer school, beyond the synergy between training and research, may also contribute to develop the mobility Japanese students, which are still not enough willing to go abroad.

The originality of the project lies in the synergy of four key factors:

- A comprehensive and sustainable approach with a partner, essential in the relationship with Japan
- An appropriate response to the problem of Japanese mobility, integrated into an active research collaboration
- A program that integrates the triptych training / research / economic environment
- The concept of reciprocity (one year in France, a year in Japan).

Finally, openness to other major partners of our institutions: KTH, Shanghai Jiaotong, may open new perspectives for this program.

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