

Report on the 9th Japanese-French Frontiers of Science (JFFoS) Symposium

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Until few years ago, FoS symposiums were not well known to the majority of scientists. Recently, however, they are becoming recognized as “a symposium that every scientist should attend at least once in their career.” They are a portal to success as they nurture promising young scientists who will make important scientific contributions in the international arena. This growing recognition is in part due to the rapidly growing number of FoS alumni, who talk about their experiences in the symposiums with colleagues. Consequently, the popularity of the program has reached a point of “critical mass.”

Rotating between Japan and France, Japanese-French Frontiers of Science (JFFoS) symposiums are attended by young Japanese and French scientists who travel between each other's countries in alternating years to attend them. Crossing borders and disciplines, their discussions range from life sciences to customs, politics and religion. The 9th JFFoS symposium was held in Kyoto on 23-25 January 2015. This was my third JFFoS symposium, as I had participated in the 7th JFFoS symposium and was then appointed a PGM for the 8th and a PGM co-chair for the 9th. This paper gives my views on the 9th JFFoS symposium.

The 9th JFFoS symposium was held at the Kyoto Brighton Hotel located on the west side of the Kyoto Imperial Palace. The hotel is situated in the quiet residential area, with lots of free space inside. It offered a relaxed setting for the researchers to enjoy engaging in discussions with each other. To take an occasional break from the intensity of the discussions, the participants would go outside and enjoy the tranquil atmosphere around the palace. Speaking of myself, I joined some local runners for a jog around the palace every morning.

From the hotel, it was a close walk to Kyoto's traditional Kawaramachi and Gion districts. After the scheduled sessions, the Japanese and French researchers would stroll over to them to hold "offline sessions." Those confabs and chats running into the wee hours every night became the norm. Aided by the comfortable environment and encouraged by the unique design of the FoS program, the participants leaped across cultures and boundaries in communicating with each other like old friends, despite the fact of being researchers in different fields whose paths would be unlikely to cross in their daily lives.

This 9th JFFoS symposium was attended by the 70 scientists in seven fields (35 from each from Japan and France). Covering one field, each session was overseen by two PGMs—one from Japan and one from France—who selected the session topics. They were joined by one chair, two speakers and five general participants. Being experts in the selected field, the chair and speakers gave easy to scientifically understand presentation and led vibrant discussion with the participants. The PGMs, chairs and speakers were entitled to participate as regular discussants in other sessions besides their own.

Following the opening ceremony, the first session was held on Materials Science. The presentations made on "Biomimetic materials" explored possibilities of material design taking hints from living organisms. The ensuing discussion got off to a bit of a slow start; then, two or three questions broke the ice, enlivening the atmosphere in the room.

After the first session, a group photo was taken, followed by lunch served in the hotel. We embarked on a discussion of "Aging of Societies" in the Social Sciences/Humanities session. As so-called "advanced nations," both France and Japan are experiencing aging populations, while encountering some problems that the two countries have in common and others whose context differs. Analyzing the kinds of societal phenomena and structures that population aging engenders and the posture to take in tackling related

problems, the speakers planted seeds for a blossoming discussion. After that, Flash Poster Talks were given, and over the course of an hour the presenters explained their posters. Each talk was only for one minute; some were prepared painstakingly while others were ad live packed with content in one minute. All attracted the avid interest of the audience. The last session of the day was on Physics and Astrophysics. Addressed was the Planck satellite mission and its physics study. The participants were introduced to an investigation to elucidate the early universe after the big bang, using a full mobilization of limited observational means and current theory of elementary particle cosmology. It spawned a probing discussion that overflowed the session's ending time.

The second day started out with a session on “Molecular and biomolecular machines”, which are assemblies of molecules that move like a machine. To be called a machine, it is only natural the control is done from the outside. Chemists design and assemble these machines using chemical concepts and techniques. (And they can't even see the molecular mechanisms at work with their naked eye!) A presentation on the results of research that enables the manipulation of these machines in ways predicted sparked an animated exchange of ideas. It was the kind of session in which you could lose sight of time and space.

While the following year's PGMs gathered for a working lunch, everybody else took a leisurely lunch break. During the symposium, the chairs and speakers were busy with the weighty tasks of preparing their sessions and giving presentations. The PGMs, on the other hand, were hard at work with the laborious task of preparing the next symposium.

Then, we all gathered to take a cultural tour that included Nanzen-ji temple with its ancient aqueduct flowing down from Lake Biwa, Eikan-do temple with its beautiful garden, and Koun-ji temple where *zazen* (*zen* sitting and meditating) is practiced, all the sites being uniquely Kyoto. In our *zazen* session at Koun-ji, we were taught the proper way of breathing and tried *zen*

meditation by imitating the Buddhist priests, who then explained the philosophy of zazen in a way that sounded to my ears like Buddhist question-and-answer riddles. With that experience still floating around the participants' heads, we headed back to the Nanzen-ji neighborhood for a *tofu* dinner. The tour added a measure of "esprit" to the symposium devoted exhaustively to science. Dining at a venerable tofu restaurant in front of the temple offered a rare opportunity, even for the Japanese members, to eat *real* boiled tofu. Both the Japanese and French participants banqueted on it. All sites we visited were historically Kyoto.

The third and final day of the symposium started with a PGM meeting, after which the first session of the day began at 10:00 a.m. with the Mathematics/Informatics session. The chair gave a general lecture on the "game theory" and two speakers introduced their research on its applications. The discussion in this session was focused on applying game theory to information transactions. The audiences asked rather challenging questions such as the applicability of the theory to more practical models, engendering an intense Q&A session.

The Life/Medical Science session was held after lunch. It saw presentations and a discussion on "Optogenetics" research. Using light to control nerve cells, it is a field that has been gaining considerable momentum over the past 10 years. With the symposium drawing to a close, the audience eagerly tossed up questions, which, fielded skillfully by the chair, fired up a heated debate, the vigor of which carried over into the symposium's final session on Earth Science/Environment. As seen in its subtitle "New discoveries on Mars and a new view of the red planet," what was presented and discussed was Mars, which has enchanted humans over several hundred years. A picture of the latest research on this heavenly body was given and future exploratory plans were explained. Looking up into the night sky, one does not get a true sense of Mars; in fact, Mars science relies heavily on electric pulses bounced back to earth from a spacecraft. With the participants asking volleys of questions from their various perspectives, the session brought the

symposium to an energetic close.

I have not yet mentioned it, but two poster sessions held, one in the afternoon of the first day and the other in the morning of the second day. During them, coffee and tea was served in the foyer where the posters were being displayed. The participants came into the foyer from time to time during breaks and lingered there to engage in discussions in front of the poster displays. The posters were put up in the foyer as everyone passed through it on their way to the sessions in the main conference room. This adroitly designed setting served to spur thriving opinion exchanges.

Finally, with all the sessions of the 9th JFFoS symposium concluded, I hoped that the attempt made by the Japanese and French researchers to get a grasp, from their various angles, on the topics especially refined for cross-disciplinary discussion and that the interchange among them would stimulate them to acquire new knowledge. In the closing ceremony, speakers from both countries extolled the success of the symposium. That evening, the participants enjoyed a traditional Japanese dinner while enjoying casual conversation amidst a friendly, relaxed atmosphere.

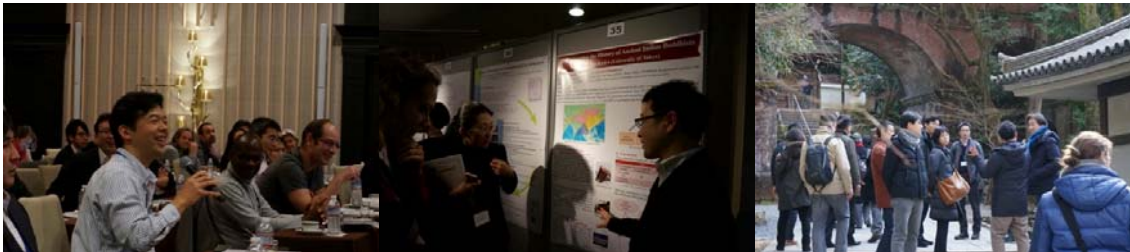
As one working behind the scenes, I was very pleased with the feeling of satisfaction I personally experienced in witnessing the second-to-none success of this symposium. It goes without saying that this resounding success was due to the contributions of each of the participants along with the members of the JSPS FoS Symposium Advisory Board and the staffs of JSPS, CNRS and the French Ministries. In conclusion, I wish to express my gratitude to all involved in this JFFoS symposium and who I believed shared my sense of fulfillment.



PGM Co-Chairs of 9th JFFoS: Prof. Hoquet (left) and Prof. Mihara (right).



Group photo



Audience amused by a sophisticated questioning (left); Poster session (center); Participants chatting during the excursion (right).



PGM meeting (left); Photo of 9th JFFoS symposium PGMs (right)