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## A personal memory of The First Soviet-Japan Symposium on Ferroelectricity

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The RCBJSF-13, held on June 19-23, 2016 in Matsue, celebrated the 40th anniversary of The First Soviet-Japan Symposium on Ferroelectricity (hereafter SJ-1) held in Novosibirsk in 1976. Requested by The Japanese Organizing Committee of RCBJSF-13, I dare to present this semi-private note on SJ-1. However, there is a question whether I'm a proper person or not to write this, because I was not much involved in the process of preparation of SJ-1, and moreover, frankly speaking, at that time, by some reasons I had kept a certain distance from several Tokyo people, who were enthusiastic to organize SJ-1. Nevertheless, I think that it may be my obligation to write this, because it is only me now, who attended SJ-1 as a formal Guest of The USSR Academy of Sciences and still stay in the Japanese ferroelectricity community as an occasional working member. Anyway, I am happy if readers would accept this as a kind of time-killing essay, since this is mostly based on my personal vague memory, so can never be a correct formal report.

Forty years are a long time. In 1976, the world was divided into two, the east and the west, with different political and economical regimes. Scientific exchanges between Japan and other countries were not so common as in nowadays, especially not with the countries in the Soviet bloc. At that time travels abroad were not so easy for Japanese, and might be prohibitively difficult for Soviet scientists.

Under such situations, quite likely in early 1970s the attempt to organize the bi-national symposium SJ-1 was launched by Professors K. Aleksandrov (Kirenski Institute, Kras-noyarsk) and L. Shuvalov (Institute of Crystallography, Moscow) at Soviet side and Professor J. Kobayashi (Waseda University, Tokyo) at Japan side. One can now easily imagine that there must have been a big problem of funding for Prof. Kobayashi, because, in USSR, The Academy of Sciences might offer a strong financial support for SJ-1 (and following SJ's as well), but in Japan there was (is, even now) no institution like The USSR Academy, which could sponsor such symposia with a multi-year basis. In spite of various hurdles, now conceivable, three professors seemed to have reached an agreement, I guess, with a non-written mutual understanding that the Symposium be organized at least twice, one in USSR and the other in Japan.

SJ-1 was thus held in Novosibirsk in Aug. 30, Monday through Sept. 3, Friday, 1976, with Professors Aleksandrov and Kobayashi as the chairman of USSR organizing committee (the host committee) and Japanese organizing committee (the guest committee), respectively.

Professors Shuvalov and T. Ikeda (Tohoku University, Sendai) served as the chairman of the publication committee at USSR side and Japan side, respectively.

According to the agreement, the number of participants from the guest country was limited to the maximum of 25, while those from the host country were up to the host organizing committee. (The total must be less than 100.) In addition, five Japanese participants would be invited to SJ-1 as the official guests of The USSR Academy. (Since they respected the reciprocity, I guess that there was a non-written understanding that five Soviet scientists be invited as the Guests in SJ-2 when held in Japan).

In fact, at SJ-1 we had 64 participants from USSR, and 24 from Japan. They are:

(from USSR) K. Aleksandrov, L. Shuvalov, G. Smolenski, I. Zheludev,

Fesenko, B. Strukov, I. Aleksandrova, A. Anistratov, N. Ivanov, R. Pisarev,

Y. Venevtsev, A. Levanyuk, G. Sannikov, T. Volk, C. Prokhorova,

K. Schwartz, G. Kozlov, A. Volkov, C. Krainik, V. Fridkin, E. Dudnik

A. Sternberg, B. Zinenko, A. Krumins, Korpakova, A. Mamedov,.....

(from Japan) J. Kobayashi, T. Nakamura, S. Sawada, T. Sakudo,

Y. Ishibashi, T. Ikeda, W. Kinase, K. Shibayama, M. Onoe, R. Onaka,

N. Ichinose, T. Shigenari, Y. Uesu, A. Sawada, K. Ohi, T. Hosokawa, Y. Fujii, O. Omoto, T. Mitsui, T. Yazaki, H. Tsuya, R. Kato, I. Ueda, Y. Furuhata.

(The Guests underlined)

Let me give a small comment here, though I don't know if it is relevant or not. As I mentioned before, I was not much interested in SJ-1 in the beginning, so did not intend to participate in it until Prof. Kobayashi called me up one evening. He informed me in a somewhat interesting tone that, by some reasons which he could not understand at all, my name was on the list of the invited Guests, and asked my participation in SJ-1. The invitation by The USSR Academy was unexpected (like "the hail from the blue sky" in a Japanese expression), at that time, not only to myself but also quite likely to anyone else. But, it was very very encouraging for me, and, of course, it was a great honor and pleasure for me to accept it, so I decided to visit Novosibirsk.

Now, at SJ-1 there were many scientific sessions, the detail of which I don't remember well now. According to the Proceedings, however, I find that there were three main subjects. They are:

- (1) Optics and spectroscopy;
- (2) Acoustic, piezoelectric, and other properties of ferroelectrics and ferroelastics;
- (3) Photo-refraction and other effects studied for optical registrations of information.

Among these three, the first one (1) is quite understandable. Regarding the second subject (2), also understandable, I remember that I was impressed to find that in USSR the words "ferroelastic" and "ferroic", first introduced by K. Aizu around 1970, had already been well accepted, though might not so in Japan in 1976. The third subject (3) strongly reflected a general trend and interest of application researches, especially of USSR, at the time.

In SJ-1 I reported our work "Raman Scattering Spectra in  $K_2SeO_{4"}$ , in which I used the word "incommensurate." As I remember, soon after my talk Professors Levanyuk and Sannikov, then both as young as I by 40 years, approached me and said that they had not known the English word "incommensurate" until listening to my talk, though they had been studying the same subject. Judging from this, I may be the first person to have used the word "incommensurate" on Russian soil. Of course, we three became good friends soon, and since then I could have learned a lot from conversations with them.

All the papers presented in SJ-1 were published in the Proceedings, i.e., *Izvestia Akademii Nauk*, Vol.43, No.3, 1977. For the Proceedings, all the papers written by Japanese in English (or written in Japanese English.) had to be translated into Russian. In fact, Drs. Ivanov, Volk, Gladki, and Zinenko did all! Great thanks on behalf of all Japanese participants!

On the final day the resolution was adopted. It said that, firstly, the SJ-1 was operated in a very successful fashion and a good example which showed an importance of international cooperation, and secondly and more importantly, SJ-2 be held in 1980 in Japan. In fact, SJ-2 was held in Kyoto in 1980 with Professor Kobayashi as the chairman of the organizing committee of the host country.

As mentioned in the resolution, SJ-1 was surely an example of successful international scientific exchange. It is needless to say that we had a big success in science of ferroelectricity. But, more important were the personal contacts between scientists of two countries. Not only in the conference room but also outside it, even in walking on the streets, I enjoyed hospitality offered by Soviet scientists and conversations with them on their everyday life, their way of thinking, their interests, etc., etc. I think that this applies to most Japanese participants.

Here, I would like to confess that I didn't understand too well the significance of being the Guest until having come to Novosibirsk. They treated me so cordially, irrespective of the seniority characteristic to Japanese society. They gave me a sort of courage, in some sense, which might have helped me to live along in the international community of ferroelectricity afterwards. So, the participation in SJ-1 thus became one of the turning points in my carrier, and in this sense I can never be too thankful to the host people, who, knowingly or not knowingly, gave me such a chance.

So far is my personal memory from SJ-1, but I should not end up this note here without mentioning the travels before and after SJ-1, because, in the offer of these travels, the enthusiasm of The USSR Academy towards SJ-1 and its great favor towards Japanese participants might be reflected. Remember that in 1976 the travels in USSR were still very difficult for foreigners. According to their proposals and recommendations, before arriving in Novosibirsk we spent two days in Irkutsuk, enjoying the tour in the town and also the visit to Lake Baikal at the eastern shore. Lake Baikal was huge, and, on the other side, we were warned not to enter deep inside Taiga.

After SJ-1, we all Japanese flew from Novosibirsk to Moscow and spent five days there. In addition to the sightseeing in the city, we visited Moscow State University and several other research institutes of The USSR Academy. Five Guests, in particular, could pay a respect visit to Professor Vul, the Russian discoverer of ferroelectricity in  $BaTiO_3$ . By my impression, he was a very quiet person, but unfortunately I don't remember well what conversations we had in a small room of some institute.

On our way back from Moscow through Khavalovsk, an extra affair had waited for us. At the boarding gate of Khavalovsk airport, the Japan Air Line attendants whispered us that a Soviet air-force pilot had flown to Hakodate several days before and requested the political asylum. Fearing that the Soviet border control might get tougher any time, we had to hurry for boarding-on. I remember that I felt quite relieved when the airplane entered Japanese territory.

All in all, SJ-1 was very successful. The fact itself that RCBJSF-Matsue, 2016, could celebrate the 40th anniversary of SJ-1 proves it. The SJ-1 gave a strong impact on every

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participant from both USSR and Japan. A lot of cooperative activities have been carried out since then, by which scientists of both sides must have been so much benefitted. In concluding my note, I would like to extend my sincere thanks to all people, who were involved in organizing SJ-1 and who have made big contributions for development of The Symposium afterwards.