

## Memoir of my walk along with the progress of USE (Symposium on Ultrasonic Electronics)

USE の発展と歩みを共にして

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### 1. Foreword

This year, USE just reaches the 40th anniversary. It was this year's first meeting of USE secretary board held in June that I was conscious of the number of "40 years". Since I am the representative member of the USE secretary board and Institute for Ultrasonic Electronics which is the mother's body of the USE administration, the number of "40 years" sounded to me with big heaviness. Furthermore, in a social meeting after the secretary board, Prof. K told me that I was one and only person who continued to participate all the symposia for 40 times. Prof. K seems to have surveyed all the lists of participants from the first to this time. Probably induced by his words, I recollected my presentation made at the first symposium under a great tension.

### 2. Beginning of USE

The process of the USE progress is featured as "the 30th anniversary commemorative project" in USE 2009, and some members of the advisors (retired members who experienced the organizing committee chair) wrote the memoirs of USE from various viewpoints. However, the process to start the USE earlier was scarcely described. Without doubt, USE did not appear in one night. There should have been the process of some twists and turns to produce USE. Therefore I thought that I have to write the process of the beginning of USE using the given space at this opportunity. It must be the best for asking such situations to call a person who worked practically. Judging from the content of information in the above 30th anniversary project, young Prof. Yasutaka Shimizu and Prof. Kenshiro Takagi seem to have practically worked for the first approximately ten years of USE. In addition, the abbreviation "USE" and the setting of its logo also seem to have been the current form by a longtime effort of Prof. Takagi. When I immediately made a contact with Prof. Takagi, he kindly told me the process until USE started. According to him, the path of USE establishment is as follows:

- 1) In about 1978, the researchers mainly of the physics group gathered and were trying to apply a large-scale project study for the grant-in-aid for scientific research on priority areas. Around the time, it was blooming over the country. However, on the contrary, there were few study budgets, and it was a hard times for the universities to acquire research funds.
- 2) Setting the project title as "Ultrasonic spectroscopy and its application to material engineering", they asked Prof. Yasaku Wada for the representative. In addition, the project was constructed with five groups. Each leader was appointed to Prof. Negishi (University of Tokyo), Prof. Mikoshiba (Tohoku University), Prof. Chubachi (Tohoku University), Prof. Ikushima (University of Tokyo), and Prof. Hamaguchi (Osaka University). The budget was around 600 million yen.
- 3) It was noticed that to hold a symposium by the joint hosting of Science Council of Japan and to show the study results in the field of ultrasound are effective. Science Council was influential to the adoption of the grant-in-aid for scientific research at this time.
- 4) Since the participation of only the physics group was assumed to be insufficient, the researchers in electric and electronics group were also gathered. Inviting Prof. Hiroshi Shimizu (Tohoku University), Prof. Mori (Tokyo Institute of Technology), Prof. Okujima (Tokyo Institute of Technology) and so on, the preparatory meeting for a symposium was held.
- 5) Taking the above term 3) into account, the symposium venue was decided to be the lecture hall of Science Council at Roppongi, Tokyo. The following rules are agreed in the preparatory meeting: The presentation is limited to one article for each research group. The result not new but acclaimed earlier must be presented. The contribution to JJAP supplement is obligated.
- 6) The symposium is judged at least to have

succeeded and the continuance in the next year was decided by the meeting after the symposium. The grant-in-aid for scientific research was adopted thereafter.

This process has been also described partly by Prof. Chubachi in the 30th anniversary project. According to him, since the research field of ultrasound so widely spreads, the researcher must participate in multiple academic societies if he/she wants to learn totally. Then the place where the total picture from the basics to the applications of ultrasound could be learned was much desired. This background at that time seems to have become the big driving force to the USE foundation. This process is reflected in the title of the symposium (Symposium on Ultrasonic Electronics) that may look slightly long for many members. In addition, all programs were carried out as a single session under the basic policy that all participants should gather in a hall and actively discuss. This policy is continuously taken over and becomes the big feature of USE. Furthermore, to keep the function to connect the contribution of the symposium paper to JJAP was a big driving force to induce the later progress of USE. In other words, through the establishment of the research results of each year in the form of the paper publication, the studies were accelerated by the information sharing between researchers. As another result for an objective of the symposium, the ultrasonic electronics seemed to begin to penetrate into the community.

### 3. Progress of USE

The first symposium was held at the lecture hall of Science Council of Japan at Roppongi, Tokyo, for three days from 15 to 17 on December in 1980 with the joint hosting by Japan Society of Applied Physics and Electric Electronic Study Corresponding Committee in Science Council of Japan. The organizing committee chair was Prof. Kimio Shibayama (Tohoku University), the secretary committee chair was Prof. Hiroshi Shimizu (Tohoku University) and the program committee chair was Prof. Morio Onoe (University of Tokyo). The program was comprised of three invited lectures and 72 general lectures, and all the presentations were orally performed. In addition, the presentation was carried out by the projection of OHP or the slide. Therefore the meeting place was not bright as today, and the indoor lighting was switched over before and after each presentation. My presentation was the seventh case on the first day.

I made a presentation standing on the pivotal part to look around all participants in a fan-shaped room. Affected also by a heavy atmosphere that the lecture hall of Science Council of Japan brought on, it was so strained time for me who was still young. By the way, the choice of the meeting place is important. I think that the performance of the first symposium in the lecture hall of Science Council had the effect to make ultrasonic researchers realize the importance of own study again. In addition, the abbreviation "USE" has not been yet used in the first symposium, and even the words "the first" was not written down in a symposium title either.

The venue was the same lecture hall of Science Council for the symposia from the 2nd to the 6th. However, since the opinion to impeach the holding at Tokyo only seemed strong, the 7th symposium was moved to Kyoto. Thereafter a system to rotate between Tohoku and Kansai inserting Tokyo in each cycle was kept before the 29th of Kansai (Nagoya).

For the topics of USE which occurred during this time, the poster session was adopted at the 4th. Instead, each presenter was required to make a 2-minute summary lecture before the session. This lecture was obligated because the basic policy of USE that all the participants gather in a hall was fully considered. The summary lecture disappeared afterwards corresponding to the increase in the number of submitted manuscripts. However, by avoiding parallel sessions, the basic policy of "gathering in a hall" is still kept.

Although USE was conducted with the joint hosting of Japan Society of Applied Physics and Science Council of Japan before the 10th, "Ultrasonic Symposium Organizing Committee" hosted the symposium after the 10th. At the same time, "USE" was first used for the notation of the symposium. The transition of the numbers of participants in USE, presented papers and JJAP papers is shown in **Fig. 1**. As seen in the figure, the number of contribution papers of USE increases year by year. While they exceeded 100 in the 10th, 200 in the 24th, and 300 in the 30th, the number of JJAP papers always maintains around 100. The reason why the participants significantly increased at the 10th held in 1989 as seen in the figure seems that the introductory activity to let various researchers know USE was actively presented for the commemoration of the 10th anniversary. In addition, the numbers of the participants and the paper submission dropped in 2016 (the 37th). This is caused by the first overseas holding (Busan, Korea). By the way,

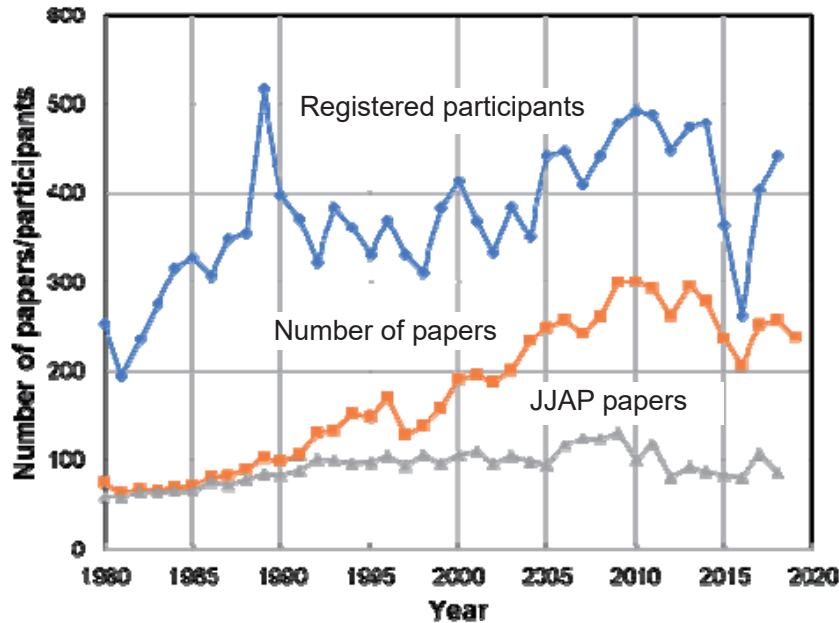


Fig. 1 Transition of numbers of contributing papers and participants of USE, and JJAP papers.

USE 2009 had the largest number of 331 presentations among all USE and published the proceedings of 761 pages in total. In addition, although the JJAP papers were published as Supplement at first, they are published as Special Issue since 1993. This is one indication that the importance of the activity of USE could be accepted to the JJAP side.

#### 4. Administration of USE

In a rough framework of the administration system at the initial stage of USE, the steering committee and the program committee were set up under the organizing committee. Their mutual cooperation was the base of the system. Furthermore, in the case where the holding place was changed, the system that the university to hold the symposium primarily conducted all the matter of practice and steering at each holding place became customary. Although this system was good in the sense of unity, the know-how of the administration could not be accumulated. Thereby each responsible university to hold the symposium had to setup the process from zero each time.

Regarding such an inconvenience, the introduction of the secretary board began to be considered in about 2007 by the members joining with Prof. Ueha to aim the administration system to further activate the symposium without placing a burden on a holding university. In this system, the secretary board appoints each secretary who

expertly takes a role to administer the general affair, account, meeting place or so on. The secretary board collecting these secretaries builds the framework to enable the continuous administration. Furthermore, in order to reinforce the cooperation with related scientific societies including Japan Society of Applied Physics which takes care of the publication of JJAP and to clarify the accounts processing, the incorporation of "Ultrasonic Symposium Organizing Committee" which is the main steering body was considered. The current NPO corporate "Institute for Ultrasonic Electronics" was established in 2014 and exists up to the present date.

#### 5. Afterword

On the occasion of 40th anniversary of USE, the history from the establishment to the present was looked back. I would like to expect further progress of USE to worldwide lead the ultrasonic electronics.

Finally, I would like to express my gratitude to Prof. Kenshiro Takagi and Prof. Kentarou Nakamura for useful information.