

University of Tsukuba: An Open University with Well-established International Standing

Baopeng Cao

Visiting Foreign Research Fellow, Center for Tsukuba Advanced Research Alliance, University of Tsukuba

My knowledge of University of Tsukuba goes back to 1995 when I was a first-year doctor-course student at Peking University, China. At that time I was just engaged in a project on metallofullerenes and had started my first step toward my academic career. When searching for related literatures, I was deeply attracted by a famous NATURE paper - Exohedral Adducts of La@C_{82} (Nature, 1995, 374, 600-601) - authored by Takeshi Akasaka, a professor at the University of Tsukuba. From that time I began to pay close attention to the respective research group as well as the University. "It would be a great honor if I were admitted to the group", I thought. Seven years later, my dream came true - I became a foreign employee at the University of Tsukuba.

As a Visiting Foreign Research Fellow at the Center for Tsukuba Advanced Research Alliance (TARA Center) of the University of

Tsukuba, I served the University for three and half years. Before joining the University, I had the experience of working at Peking University (China), The Hebrew University of Jerusalem (Israel), Nagoya University (Japan), and Indiana University (USA). As a foreign employee, I loved the University of Tsukuba best.

1. Open and Beautiful Campus

Though I came to know about the University of Tsukuba as early as in 1995, my first visit to the University was not completed until 2001, when I was invited by Prof. Akasaka to visit his laboratory during a conference held in Tsukuba Science City. He gave me a ride from the International Conference Center to the campus. As soon as entering the campus of the University of Tsukuba, I was fully attracted by its beauty. The first impression the university gave me

was that it didn't look like other universities in Japan. It was open - no walls and gates to isolate the university from outside. It was green - tall green trees lining the loop, lawns embellishing the spaces between buildings, and flowers blooming in the university garden. It was large - it took us 25 minutes to complete a vehicle tour along the campus loop. It was rich in nature - Lakes mirroring the blue sky, fish swimming and wild ducks and lovebirds frolicking in the lake, and birds singing at dawn. What a beautiful campus! The campus of the University of Tsukuba is unique in Japan but quite similar to those in the United States of America and Europe.

2. Close Ties with Government, Industry, Outside Research Organizations, and Society - A Genuine Openness.

The second feature of the University of Tsukuba that impresses me greatly is its excellent relationship with the government, its active cooperation with the industry and outside research organizations, and the strong desire to return the benefits of education and research to society. The University of Tsukuba has established two centers - the TARA Center and the Tsukuba Industrial Liaison and Cooperative Research Center (ILC Center) - to bridge the gap between

government, industry and university, to promote the transfer of technology invented and innovated by the university academia to the industry - the Campus Incubation, and to convey the various needs of society to the university researchers. Metallofullerene - one of the carbon nanomaterials, for example, has extensive application perspectives in medicine, biology, electronics, energy, and so on. However, its researches and application have been seriously hindered by its limited production and tedious isolation technique. A new technique developed by the Nano-Project in TARA Center at the University of Tsukuba has made it possible to produce 50 mg of pure metallofullerene daily (before, the amount would usually take at least four months to accomplish). Benefiting from the university's Industrial Liaison and Cooperation system, Mitsui-bussan Company employed immediately this new technique to set up a new branch - Nano-Carbon-Materials - to get the invention industrialized. Another technique, used to shorten, disperse, and purify carbon nanotubes in an efficient and simple way, was innovated by TARA Center and ILC Center at the University of Tsukuba and will be transferred to the Venture Company. The products will be put into the market in the near future.

The University of Tsukuba actively offers different programs freely to the general public, to return its benefit of education and research to society. Among the programs that move me most are the Sports Fitness Program offered to elders and the Open Lectures and One-day Academic Exploration offered to high school students. The first program cares for the former contributors to the country. The elders from different parts of Japan are invited to the university to be trained in various sports, and the results are evaluated according to their fitness to the sports by competent university researchers. Based on this evaluation, the individual elder is given advice on what sport program is best for him/her, in order to strengthen his/her body and stay in good health. In this way the program helps the government save billions in the elder Medicare system. The second program takes care of the high school students - the young generation, the future of Japan. To cultivate younger generations' interests in science and technology, the University of Tsukuba provides high school students with free Open Lectures and One-day Academic Exploration program. In this way the university offers the students a great chance to enjoy the scientific exploration and achievements that they are not able to

experience at school. This is certainly a good influence on the future technical growth of Japan.

3. Young yet World-Famous with Its Great Accomplishments

When talking with USA professors working in Chemistry, I found that most of them knew the University of Tsukuba well. They thought that the University of Tsukuba was “young”, but very famous in Physics and Chemistry in the world. They all knew Prof Shirakawa and his work, conductive polymers, which received the Nobel Prize in 2000. They said that a university like Tsukuba, that has three Nobel Prize laureates, is rare in the world and is of course a top university as well. It has been well-accepted in the western world that USA is No. 1 in Chemistry, Germany comes next, and UK, Israel, and Japan rank No. 3. The University of Tsukuba is one of the top universities not only in Japan but also in the world.

To the best of my knowledge, the equipment here is very advanced. The University of Tsukuba possesses excellent “hard” and “soft” infrastructures necessary for excellent education and scientific researches. I feel that it is very convenient to do research at the University of Tsukuba

- almost all the characterization techniques necessary for one's research are present here. The University is located in the center of Tsukuba Science City, which is well known for its large concentration of advanced research institutions in many areas of science and technology. The cooperation within and outside the university is beneficial for the research work. Professors in the Department of Chemistry at the University of Tsukuba publish every year dozens of excellent research papers in top academic Chemistry Journals such as the Journal of the American Chemical Society, Angew. Chem, etc. - this is not an easy thing to accomplish even for professors in North America. The University of Tsukuba has attained high international esteem for its multitude of research accomplishments. Owing to its well-established international standing, the University of Tsukuba has attracted every year thousands of foreign students from all over the world. Upon completion of their academic studies at the University, the foreign students and scholars return to their home countries or third nations carrying the concepts and the excellent image of the University, which glorifies further the fame of the University of Tsukuba.

The University of Tsukuba has been a forerunner among Japanese universities

in education and research, and I hope this university will continue leading the way in competition as well as in collaboration with other universities both in Japan and abroad.

(ツアオ バベン／物質化学)