The special course of environmental sciences was successfully carried out in Shanghai East High School on October 17th, 2014. Selected 68 students from both Shanghai High School and Shanghai East High school attended this special course. After a warm welcome from the president of Shanghai East High School, Mr. Xue and the vice president of Shanghai High School, Mr. Zhu, Prof. Tanaka from University of Tsukuba expressed our sincere gratitude to obtain such a rare opportunity to communicate current environmental issues with young smart minds.

Following that, students from Shanghai High School made 4 presentations about their previous extracurricular experiments on several daily environmental problems, such as the ozone emission from copy-machine, black carbon release during daily commuting... Their fluent and clear English expression, as well as their level of professionalism amazed me, and filled me with admiration. What impressed me most is the presentation from two girls, Lu and Qiu. They used genetic technology to detect the existence of Cryptosporidium oocyst in sewage water. The methods they used, such as PCR-amplification and electrophoresis, were exactly college-student level. I think sparing their after-class time to finish such high-level work is really remarkable.

Prof. Tamura, Prof. Utsumi, Prof. Yamanaka, Prof. Zhang, Prof. Yang, as well as two PhD course students (Ms Li and I) gave speeches about current environmental problems in worldwide. Since China is now facing severe environmental problems in air, water, and also soil phase, these high school students showed great curiosities on possible solutions and future outlooks on such problems. We could tell from their eyes that they really concerned on Chinese environment issues, and we could also tell from their professional questions that they took great efforts on studying environmental knowledge. I felt...
In my speech, I talked about nitrification in the Arctic Ocean, global nitrogen cycle, as well as genetic technologies we used to study nitrifying microorganisms in nitrification. It was my first time to make a speech for high school students, and as a PhD student from Graduate School of Life and Environmental Sciences, I feel responsible to make an understandable and educational speech. Thus, I’d been trying to make my contents easy to be understood by these young students. When talking about the theory of real-time PCR (a newest technology to detect functional microorganisms), I used a video to explain how it works. For the methods and results part, instead of difficult professional sentences and long boring paragraphs, I used maps, sampling photos, flow-charts and plots to make my presentation more understandable to them. I was glad that a lot of questions were asked by these students: such as the difference between real-time PCR and normal PCR, the possible application of nitrifying microorganisms in the industrial phase… these questions showed that they were not just listening, they were also thinking deeply. Their skepticism was remarkable, and their review helps me improve my presentation skills.

The course finished, and I still cannot forget their young and lively faces. I’ve been thinking all the time: when I was at their age, I was as enthusiastic as them, and I believed our efforts would definitely change current situation of China and thus the whole world as well. However, after so many years, reality frustrated me and I felt hesitated and lost my passion sometimes. Communicating with these young students moved me, and all the passion and belief are coming back to me right now. I have to say, I have also learned a lot from these young students.

At last, I would like to express my deep gratitude to Shanghai East High School, Shanghai High School, China office of University of Tsukuba, as well as Graduate School of Life and Environmental Sciences of University of Tsukuba, for giving me such precious opportunity to communicate with excellent high school students. It was my great honor to represent graduate students from Graduate School of Life and Environmental Sciences of University of Tsukuba and introduce our daily research life. I would also like to give my special thanks to Prof. Utsumi, Prof. Yang, Prof. Zhang and all the other professors who generously helped me all the time. I hope there will be more opportunities for such High school-University
communication, as well as Japan-China communication. May the friendship between University of Tsukuba and Shanghai East High School & Shanghai High School last forever, and may the friendship of Japan and China last forever.

Figure 5 President Xue from Shanghai East High School, President Zhu from Shanghai High School and Professors from University of Tsukuba.