

# Conference Report

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With the recommendation of Korean Society of Environmental Engineers and thankful supports by the overseas member invitation program, I could attend the 49<sup>th</sup> Annual Conference of Japan Society on Water Environment successfully held in Kanazawa University from 16<sup>th</sup> of March to 18<sup>th</sup> of March. It was sincerely my great honor to get the JSWE-IDEA water environment international invitation award and give a presentation at the conference and I really appreciated the JSWE and all the people who help and support me.

Since I became a researcher, I have been trying to attend various international conferences being held in across the world. Among them, I should admit that, JSWE is one of the most informative and active conferences. Every year, conference was always full of interesting and cutting edge topics related to not only water treatment area but also all environmental areas. During conference I could meet and communicate with many researchers from Japan, China and other countries. Sharing knowledge and experiences was another privilege for the conference attendance. Those experiences and communications have provided me various opportunities to broaden and polish my research area and to keep my active research momentum.

My main research area is environmental related processes, especially biological wastewater treatment (nitrogen and phosphorous removal) and anaerobic digestion process. I have been involving in various research projects for the developments of effective biological wastewater treatment processes. In special, recently I have been trying to develop the effective anaerobic digestion process such as dry anaerobic digestion, ultrasonicator attached anaerobic digester etc. to improve the anaerobic digestion performance of

livestock waste, sewage sludge and foodwaste etc.

In the conference, I was given a chance to share my recent works which is related to new application of ultrasonication as a tool of enhancing anaerobic performance by activating microbial communities. My presentation (title of "Effects on the physico-chemical characteristics of microbial granules in low sonication") was mainly about positive effects of ultrasonication on anaerobic granules and elucidating the positive effect through physico-chemical approaches. The physico-chemical characteristics of anaerobic granules are one of the most important properties for the successful operation of upflow anaerobic sludge blanket, since they could directly affect the substrate and nutrient transportation into granules. As presented, the physico-chemical changes of ultrasonicated granules such as increased permeability (37%) and increased specific surface area (230%) seem to be very supportive of the fact that low strength ultrasonication positively affects the methanogenic granules toward higher AD performance. Because the penetration of nutrient and substrate into granules could be enhanced, and then more favorable conditions seemed to be expected to the ultrasonicated granules toward to the higher anaerobic performance.

Even though the conference was just ended, I myself already look forward to attending next conference. I sincerely hope that our relationship between Korea and Japan should be prolonged and even more tightened for the advances of environmental area in Asia.

Finally, I am deeply grateful to the citizens of Kanazawa for supplying hospitality and easiness to our family during conference periods.

Thank you again and hope to meet you all at next conference. Bye now.