

The 12th International Workshop on Biomaterials in Interface Science

- Innovative Research for Biosis-Abiosis Intelligent Interface Summer Seminar 2017 -

Biosis-abiosis intelligent interface science has been developed by interdisciplinary and collaborative works to understand and control phenomena arising at the interface between human constituents and biomaterials. Researchers and students from various fields related to biomaterials gathered at the 12th International Workshop on Biomaterials in Interface Science on Aug. 4–5th at Sendai, Japan. The invited lectures by 7 forefront researchers and 21 contributed papers provided valuable opportunity for cross-over discussion, interdisciplinary idea sharing and new collaboration to develop the intelligent interface science.

To develop advanced biomaterials that can be adopted in human bodies for a short time and be used over a long term, highly functional and autonomic intelligent interface should be created by combining knowledge obtained from various research fields, such as material science, medical engineering and dentistry, since phenomena occurring at the biosis-abiosis interface are quite complicated. Therefore interdisciplinary and international research activities are of great importance to understand the complex phenomena and optimize the biosis-abiosis interface by developing biomaterials, material design and systems. Three Institute in Tohoku University, namely Institute for Materials Research (IMR), Graduate School of Dentistry and Graduate School of Biomedical Engineering, have been collaborating and involved in the 5-year project on Biomaterials to establish a new concept, "Biosis-Abiosis Intelligent Interface Science". In the frame the project, the series of international forums have been held 11 times. For further developing the Biosis-Abiosis Intelligent Interface Science, 12th International Workshop on Biomaterials in Interface Science in conjunction with Innovative Research for Biosis-Abiosis Intelligent Interface Summer Seminar 2017 was held by a new collaborative project "Creation of Life Innovation Materials for Interdisciplinary and International Researcher Development" on Aug. 4th–5th, 2017, at Akiu in Sendai, Japan.

This workshop had 7 invited lectures and 21 contributed papers. The invited lectures were given by distinguished professors on biomaterials from Taiwan, China, Russia, Korea, Mexico and Japan. 81 participants of professors, researchers and students attended. Prof. Kwangmahn KIM, who is the dean of Department and research institute

of dental biomaterials & bioengineering, Yonsei University provided an invited lecture on alternative test methods of biocompatibility test for dental biomaterials. The topic of the invited lecture by Prof. Tzer-Min LEE was on the current status and future of surface treatments of dental implants. Prof. Takao HANAWA gave an invited lecture on next generation implant surface. The state-of-the-art research on in vivo multiscale photoacoustic imaging was provided by Prof. Chulhong KIM. Prof. MANGKONSU gave an invited lecture on sintering behavior of beta-tricalcium phosphate and its properties. Prof. James TSOI introduced dental CAD/CAM materials. From the side of material science, Prof. Torres-Martínez provided a lecture on an efficient photocatalytic material of $\text{Na}_2\text{Zr}_x\text{Ti}_{6-x}\text{O}_{13}$ while Prof. Zadorozhnyy introduced his updated research on biocompatible metal materials produced by severe plastic deformation methods. These invited lectures and contributed papers gave the all participants a valuable opportunity for sharing interdisciplinary viewpoints and ideas. The collaborative discussion had great contributions to the development on the intelligent interface science on biomaterials.



Fig.1 Shots in lectures and Group photo.