

The 10th Anniversary International Workshop on Biomaterials in Interface Science

- Innovative Research for Biosis-Abiosis Intelligent Interface Summer Seminar 2015 -

Biosis-abiosis intelligent interface science is a new concept to develop materials and systems between human constituents and biomaterials because of strong demands for replacing various parts in human-body with artificial products. Forefront researchers and students from various fields related to biomaterials gathered at the 10th Anniversary International Workshop on Biomaterials in Interface Science on Aug. 4–5th at Sendai, Japan. The Invited lectures by five experts from abroad and 22 papers provided valuable opportunity for cross-over discussion, interdisciplinary idea sharing and new collaboration to develop and establish the intelligent interface science on biomaterials.

To meet a variety of requirements for multi-functionality under complex circumstances in human bodies, it is quite difficult by using and developing monolithic and homogeneous materials. Interdisciplinary and international activities are necessary to develop the biomaterials, such as artificial bone and tooth, and the biomaterials should be controlled regarding biofunctionalities and mechanical properties in a wide scales from nano- to micro-scale, as well as compatibility with human body. 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. As the series of international forums in the frame this project, the 10th Anniversary International Workshop on Biomaterials in Interface Science in conjunction with Innovative Research for Biosis-Abiosis Intelligent Interface Summer Seminar 2015 was held on Aug. 4th–5th, 2015, at Miyagi Zao, Sendai.

The 2-days technical program in this workshop included 27 papers in which 5 invited lectures were given by distinguished professors and experts on biomaterials from Australia, Thailand and China. 72 participants of professors, researchers and students attended in the workshop. Prof. Peck Christopher Charles who is the dean of Faculty of Dentistry, the University of Sydney provided an invited lecture involving the current activities of dental bioengineering in Sydney. The invited lecture by Prof. Prasit Pavasant was on dual-leached polycaprolactone porous scaffolds for bone tissue regeneration. Prof. Jukka Pekka

Matinlinna gave a lecture on applications of silicon chemistry in dentistry. The state-of-the-art research on biocompatibility of dental materials was provided by Dr. Jian-min Han. Dr. Alfred C. H. Yu gave an invited lecture on Understanding the interfacial biophysics in sonoporation, particularly on actin disruption and membrane blebbing. Prior to these invited lectures, Prof. Keiichi Sasaki who is the dean of Tohoku University Graduate School of Dentistry and the project leader of the collaborating 5-year project introduced the progress and present state of the project. Furthermore, presentations by speakers with various academic backgrounds provided presentations on updated research from a various fields such as dentistry, bioengineering and bio materials. These invited lectures and oral presentations gave the all participants a valuable opportunity for sharing interdisciplinary viewpoints and ideas. These collaborative discussion had great contributions to the development on the intelligent interface science on biomaterials.



Fig. 1 Group photo and shots in lectures.

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