

## The 13th International Workshop on Biomaterials in Interface Science

- Innovative Research for Biosis-Abiosis Intelligent Interface Summer Seminar 2018 -

The field of biosis-abiosis intelligent interface science has been developed by interdisciplinary and collaborative works, which contributes to the cognition and manipulation of phenomena arising at the interface between human constituents and biomaterials. Both researchers and students from various fields gathered at the 13th International Workshop on Biomaterials in Interface Science on Aug. 2–3rd at Sendai, Japan, where the invited lectures from 8 forefront researchers and 22 contributed oral presentations provided valuable cross-over discussions, idea communications, and new collaborations for further developing the interface science.

The development of novel biomaterials, instruments, and diagnostic techniques is crucial important for the aging society. However, phenomenon occurring in human bodies are quite complicated, because of biomaterials often require multi-functionality under various and complex circumstances. It is important to develop materials with the precise control of microstructures and interfaces in the wide scale from atomic levels to micron and larger sizes by the integration of materials and research fields. Hence, the interdisciplinary insights from a variety of scientific fields including material science, medical engineering and dentistry is required for developing novel biomaterials. Therefore interdisciplinary and international research activities are of great importance for understanding the complex phenomena and optimize the biosis-abiosis interface.

For the abovementioned purpose, three institutes in Tohoku University, including the Institute for Materials Research (IMR), Graduate School of Dentistry and Graduate School of Biomedical Engineering, have been collaborated and involved in the 5-year project related to Biomaterials, for establishing a new concept of “Biosis-Abiosis Intelligent Interface Science”. In the frame of the project, series of international forums have been held 12 times. Moreover, the 12th International Workshop on Biomaterials in Interface Science in conjunction with the Innovative Research for Biosis-Abiosis Intelligent Interface Summer Seminar 2018 was held, cooperated by a collaborative project “Creation of Life Innovation Materials for Interdisciplinary and International Researcher Development” on Aug. 2nd–3rd, 2018, at Akiu in Sendai, Japan.

This workshop had 8 invited lectures and 21 contributed oral presentations, where the invited talks were given by distinguished professors in research fields of biomedical materials from China, Korea, Indonesia, Australia, and Japan. In total, 76 participants compose of professors, researchers, and students attended. The Prof. Chuan-Bin Guo from

Peking University provided an invited talk on the development of a puncture robot for precise radioactive seed placement for treatment of tumors in the skull base. Prof. Ok-Jin Park from the Seoul National University gave an invited talk with the title of Muramyl dipeptide as a novel inducer of bone formation. Prof. Junichi Nakai from Saitama University talked about the in vivo calcium imaging with genetically encoded calcium indicators. Prof. Yin Xiao, from Queensland University of Technology gave an invited talk on the modulation of the osteoimmune environment by biomaterials for osteogenesis. Prof. Naoto Ohtake from Tokyo Institute of Technology talked “Deposition and Characterization of Diamond-like Carbon films”. Prof. Chia-Ching Wu from National Cheng Kung University gave a talk on the material and mechanical interface for peripheral nerve regeneration. Prof. Xufeng Dong from Dalian University of Technology of China talked about the mechanical properties and cytocompatibility of polymer scaffolds with anisotropic structure. Prof. Hyung-in Yoon from Seoul National University School of Dentistry gave an invited talk about the 3D-printed complete denture: in-vitro evaluation of tissue surface adaptation.

Fig.1 Shots in lectures and Group photo



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**Innovative Research for Biosis-Abiosis Intelligent Interface Summer Seminar 2018**

Organized & Sponsored by

Creation of Life Innovation Materials for Interdisciplinary and  
International Researcher Development

International Collaboration Center, Institute for Materials Research  
(ICC-IMR)

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August 2–3, 2018

Hotel Hananoyu, Sendai, Miyagi, Japan

**Workshop Agenda**

**2 Aug., 2018**

- 13:30 Opening session
- 13:35 Session I (I-01, I-02, I-03 C-01–04) Break
- 16:20 Session II (I-04, I-05, C-05–09)
- 18:35 Group photo
- 19:30 Banquet

**3 Aug., 2018**

- 9:30 Session III (I-06, C-10–13)  
Break
- 11:15 Session IV (I-07, C-14–17)
- 12:45 Lunch Break
- 13:45 Session V (I-08, C-18–21)

**2 Aug. 2018**

	Start Time	No.		Speaker
<b>Opening Session</b>				
15:15	13:30	0:05	Opening address	SASAKI, Keiichi
<b>Session I:</b>				
				Chair: SASAKI, Keiichi & HANAWA, Takao
	13:35	0:30	I-01 Invited Lecture	GUO, Chuan-Bin
	14:05	0:30	I-02 Invited Lecture	HAN, Seung Hyun
	14:35	0:30	I-03 Invited Lecture	NAKAI, Junichi
	15:05	0:15	C-01 Oral talk	MATSUSHITA, Nobuhiro
	15:20	0:15	C-02 Oral talk	SATO, Emika
	15:35	0:15	C-03 Oral talk	SHIWAKU, Yukari
	15:50	0:15	C-04 Oral talk	CHIGAMA, Hiroki
	16:05	0:15	Break	
<b>Session II:</b>				
				Chair: SUZUKI, Osamu & KAWASHITA, Masakazu
	16:20	0:30	I-04 Invited Lecture	XIAO, Yin
	16:50	0:30	I-05 Invited Lecture	OHTAKE, Naoto
	17:20	0:15	C-05 Oral talk	TSUTSUMI, Yusuke
	17:35	0:15	C-06 Oral talk	MIYASHITA, Makiko
	17:50	0:15	C-07 Oral talk	KUROBANE, Tsuyoshi
	18:05	0:15	C-08 Oral talk	SIREGAR, Syahril
	18:20	0:15	C-09 Oral talk	YASHIRO, Wataru
	18:35		Group photo	
	19:30		Banquet	

**3 Aug. 2018**

<b>Session III:</b>				
				Chair: KATO, Hidemi
	9:30	0:30	I-06 Invited Lecture	WU, Chia-Ching
	10:00	0:15	C-10 Oral talk	TSUKAMOTO, Masahiro
	10:15	0:15	C-11 Oral talk	ABIKO, Yuki
	10:30	0:15	C-12 Oral talk	SHIBATA, Misaki
	10:45	0:15	C-13 Oral talk	SUKHBAATAR, Ariunbuyan
	11:00	0:15	break	
<b>Session IV:</b>				
				Chair: SAJYO, Yoshifumi
	11:15	0:30	I-07 Invited Lecture	DONG, Xufeng
	11:45	0:15	C-14 Oral talk	WU, Jun
	12:00	0:15	C-15 Oral talk	SETIANINGTYAS, Dwi
	12:15	0:15	C-16 Oral talk	QI, Jiawei
	12:30	0:15	C-17 Oral talk	KIKUCHI, Ryohei
	12:45	1:00	Lunch break	Committee Meeting
<b>Session V:</b>				
				Chair: TAKAHASHI, Nobuhiro
	13:45	0:30	I-08 Invited Lecture	YOON, Hyung-In
	14:15	0:15	C-18 Oral talk	WANG, Hao
	14:30	0:15	C-19 Oral talk	MIKAMI, Keita
	14:45	0:15	C-20 Oral talk	SRI, Oktamuliani
	15:00	0:15	C-21 Oral talk	KONDO, Takeru
	15:15		Closing	TAKAHASHI, Nobuhiro