

# Frontier Bioorganization Forum 2017:

## Dynamical ordering and integrated functions of biomolecular systems

(April 24<sup>th</sup>~April 26<sup>th</sup>, 2017)

### Program

#### **APR. 24 (Mon.)**

08:45 – 09:15

Registration

09:15 – 09:30

Opening ceremony

Opening remarks

Chair: Prof. Ming-Daw Tsai

Institute of Biological Chemistry,  
Academia Sinica

Chair: Prof. Y. K. Li

College of Science,  
National Chiao Tung University

Prof. Koichi Kato

Okazaki Institute for Integrative Bioscience,  
National Institutes of Natural Sciences

#### **Session 1**

**09:30 – 10:30**

(Chair: Prof. Hans Chun-Hung Lin (Institute of Biological Chemistry,  
Academia Sinica))

**Time**

**Title of Talk**

**Speaker**

09:30-10:00

Structural insights into dynamic orchestration of biomolecular  
systems

Koichi Kato

10:00-10:30

Mass spectrometry-based Protein Glycosylation Analysis –  
a close-up view on the sweetened protein functions

Kay-Hooi Khoo

10:30-11:00

Coffee Break

#### **Session 2**

**11:00 – 12:30**

(Chair: Prof. Hironari Kamikubo (Graduate School of Materials Science,  
Nara Institute of Science and Technology))

**Time**

**Title of Talk**

**Speaker**

11:00-11:30

Native mass spectrometry: complementary to other  
biophysical methods

Susumu Uchiyama

11:30-12:00

Structural basis to develop potent and selective inhibitors for  
galectin and glucuronidase

Hans Chun-Hung Lin

12:00-12:30

Structure-Based Drug Design for Wnt/ $\beta$ -catenin Signaling  
Diseases

Weontae Lee

12:30-13:30

Lunch

**Session 3****13:30 – 15:00**

(Chair: Prof. Takafumi Ueno (Graduate School of Bioscience and Biotechnology,  
Tokyo Institute of Technology))

<b>Time</b>	<b>Title of Talk</b>	<b>Speaker</b>
13:30-14:00	Biomolecular simulations in generalized ensemble	Yuko Okamoto
14:00-14:30	Reconstructing microRNA-mediated gene regulatory networks in human	Hsien-Da Huang
14:30-15:00	Theoretical study on substituent and solvent effects for nanocube formed with gear-shaped amphiphile molecules	Masanori Tachikawa
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15:00-15:30	Coffee Break	

**Session 4****15:30 – 17:30**

(Chair: Prof. Po-Huang Liang (Institute of Biological Chemistry,  
Academia Sinica))

<b>Time</b>	<b>Title of Talk</b>	<b>Speaker</b>
15:30-16:00	Molecular Mechanism for Axon Navigation in the Brain	Naoyuki Inagaki
16:00-16:30	Biosynthesis of Streptothricin: activation, resistance and development	Tsung-Lin Li
16:30-17:00	Strain-sensitive regulation of mechanical activities of dyneins underlying oscillatory movement of sperm flagella	Chikako Shingyoji
17:00-17:30	Toward decoding complexity and logic of protein polySUMO/Ub modifications	Yane-Shih Wang
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18:00-	Banquet	

**APR. 25 (Tue.)****Session 5****09:00 – 10:30**

(Chair: Prof. Ryota Iino (Okazaki Institute for Integrative Bioscience,  
National Institutes of Natural Sciences))

<b>Time</b>	<b>Title of Talk</b>	<b>Speaker</b>
09:00-09:30	Multi-component equilibrium in biological systems explored by using continuous titration SAXS	Hironari Kamikubo
09:30-10:00	Wetting and Instability Studies of Polymer Nanomaterials in Porous Templates	Jiun-Tai Chen
10:00-10:30	Design of Protein Assemblies as Supramolecular Platforms	Takafumi Ueno
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10:30-11:00	Coffee Break	

**Session 6****11:00 – 12:30**

(Chair: Prof. Tung-Kung Wu (Department of Biological Science & Technology,  
National Chiao Tung University))

Time	Title of Talk	Speaker
11:00-11:30	Investigation on domain motion of protein by neutron scattering	Masaaki Sugiyama
11:30-12:00	Folding and misfolding of topologically knotted ubiquitin C-terminal hydrolases	Shang-Te Danny Hsu
12:00-12:30	Versatile structural architectures of archaeal homolog of proteasome assembly chaperone	Maho Yagi-Utsumi
12:30-13:30	Lunch	

**Session 7****13:30 – 15:00**

(Chair: Prof. Ping-Chiang Lyu (Institute of Bioinformatics and Structural Biology,  
National Tsing Hua University))

Time	Title of Talk	Speaker
13:30-14:00	A primary ion pump: proton/sodium pumping pyrophosphatases	Yuh-Ju Sun
14:00-14:30	Protein Structure Prediction/Determination by Global Optimization	Jooyoung Lee
14:30-15:00	Structural basis of the <i>Klebsiella pneumoniae</i> PmrA response regulator in gene transcription and inhibitor development	Chinpan Chen
15:00-15:30	Coffee Break	

**Session 8****15:30 – 17:30**

(Chair: Prof. Wen-Sheng Chung (Department of Applied Chemistry,  
National Chiao Tung University))

Time	Title of Talk	Speaker
15:30-16:00	Nanocube: Ultra-Thermostable Self-Assemblies in Water	Shuichi Hiraoka
16:00-16:30	Amphiphilic nanoparticles of resveratrol–norcantharidin and its peptide analog to enhance the toxicity in <i>Escherichia coli</i> and zebrafish embryo	Chien-Chung Cheng
16:30-17:00	Control over differentiation of a metastable supramolecular assembly	Kazunori Sugiyasu
17:00-17:30	Molecular Interactions in the Formation of Self-assembled Peptide Hydrogels	Hsin-Chieh Lin
17:30-18:00	Panel Discussion	
18:30-	Invited Dinner	

**APR. 26 (Wed.)**

**Session 9**

**09:00 – 10:30**

(Chair: Prof. Hsiao-hua Yu (Institute of Chemistry,  
Academia Sinica))

<b>Time</b>	<b>Title of Talk</b>	<b>Speaker</b>
09:00-09:30	Chemo-mechanical coupling mechanisms of linear and rotary molecular motors revealed by high-speed single-molecule imaging analysis	Ryota Iino
09:30-10:00	Direct visualization of dynamic molecular interactions using HS-AFM	Takayuki Uchihashi
10:00-10:30	Viscosity, thermal diffusivity, and polarity of lipid bilayer membranes estimated from fast time-resolved spectroscopic measurements	Koichi Iwata
10:30-11:00	Coffee Break	

**Session 10**

**11:00 – 12:30**

(Chair: Prof. Masaaki Sugiyama (Research Reactor Institute,  
Kyoto University))

<b>Time</b>	<b>Title of Talk</b>	<b>Speaker</b>
11:00-11:30	Understanding of Self-Assembly Process at Molecular Level	Hirofumi Sato
11:30-12:00	Towards pharmacological analysis using zebrafish models of cardiovascular diseases	Ian Liao
12:00-12:30	Smart PEDOT Nanostructures for Circulating Tumor Cells Related Cancer Prognosis	Hsiao-hua Yu
12:30-13:30	Lunch	