Advanced Program  
*Session allocations and time are subject to change.  
Please confirm final program to be announced on October 1st.

The Third International Workshop on Magnetic Bio-Sensing  
IWMBS2018 in Yokohama, Japan  
November 5-6, 2018  
www.iwmb.org

Overview

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<td>November 5th</td>
<td>9:45</td>
<td>Registration open</td>
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<tr>
<td>Monday</td>
<td>10:30</td>
<td>Plenary session / Particle Imaging</td>
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<td>Lunch</td>
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<td>Therapy</td>
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<td>November 6th</td>
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<td>Sensing 1</td>
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<td>Tuesday</td>
<td>11:45</td>
<td>Lunch</td>
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<td>Sensing 2 / Hyperthermia</td>
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<td>15:45-16:00</td>
<td>Closing (incl. Poster Award Ceremony)</td>
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Instructions for presentation

1. Oral presentations:
   Please bring your own laptop computers. Connectors to HDMI and VGA (D-Sub 15 pins) are available.
   - Plenary lecture and Plenary talk: 25 min (20 min presentation and 5 min discussion)
   - Invited talk and Lecture: 20 min (15 min presentation and 5 min discussion)
   - Other oral presentation: 15 min (12 min presentation and 3 min discussion)

2. Poster Presentations
   Each poster should be fit within a 120 cm TALL by 90 cm WIDE board. Push pins and magnets are available, which are supplied by the workshop organizer.
   All poster must be set up no later than 12:30 on Nov. 5th Monday, and removed between 12:30 and 16:00PM on Nov. 6th Tuesday.
   Poster award will be announced at the Closing Session on Nov. 6th, Tuesday.

Registration

We only accept On-site registration. Registration fee must be paid by cash (Japanese Yen) at the conference desk. Registration Fee includes technical sessions, coffee breaks, Abstract booklet, and Banquet.

For international participants: it may be good to exchange to Japanese Yen at the airport.

   - Full Conference Participant: ¥20,000
   - Student Participant: ¥15,000

Access to “Education and Culture Hall” of Yokohama National University and accommodation

1. Access to the venue: “Education and Culture Hall” (S1-2) of Yokohama National University
   The venue is close from the Main Entrance of Yokohama National University.
   http://www.ynu.ac.jp/english/access/map_campus.html

   You may walk from Mitsuzawa-kamicho Station of Yokohama Municipal Subway for 15 min.
   http://www.ynu.ac.jp/english/access/train_front.html

2. Accommodation
   It would be convenient if you book your hotel at area of: Yokohama Station, Kannai Station, or Sakuragicho Station.
   You may reach to Mitsuzawa-kamicho Station from these stations by Yokohama Municipal Subway for 5-10 min.
   Staying at Shi-Yokohama Station is NOT nice for banquet and other activities.

Conference Proceedings

The authors are recommended to submit their manuscripts to Journal of the Magnetics Society of Japan (JMSJ), a peer-review online journal with open access. Payment of publication charge is necessary for accepted papers.
Program: Oral Presentations

--- Session 1: Particle Imaging --- Chair: S. Tanaka

**PL-1: Plenary Lecture**
Parameters Affecting Signal Strength and Spatial Resolution in Magnetic Particle Imaging  
Keiji Enpuku, Kyushu University, Japan

**PT-1: Plenary Talk**
Magnetic Particles' Susceptibility Imaging  
Shiqiang Pi, Wenzhong Liu, Shuai Wang, Tao Jiang, Huazhong University of Science and Technology, China

**I1-1: Invited Talk**
Novel spin dynamics of magnetic nanoparticles for bio-imaging and hyperthermia applications  
Sang-Koog Kim, Seoul National University, Korea

**O1-1**
Improvement of Spatial Resolution in Magnetic Particle Imaging Using Fractionated Magnetic Particles  
T. Yoshida, T. Nakamura, O. Higashi, and K. Enpuku, Kyushu University, Japan

--- Session 2: Therapy --- Chair: W. Liu

**L2-1: Lecture**
Principles and applications of transcranial magnetic stimulation  
Masaki Sekino, The University of Tokyo, Japan

**I2-1: Invited Talk**
Assembled Magnetic Nanomaterials for Mechanotransduction of Cancer Treatment  
Yu Cheng, Tongji University, China

**I2-2: Invited Talk**
Magnetic ablation  
Jen-Je Chieh, Taiwan Normal University, Taiwan

**I2-3: Invited Talk**
Multifunctional Magnetic Nanocomposite Biomaterials for Cancer Multimodality Treatment and Image  
Wang Dan¹, Xie Wenhong¹, Liaw Bor-shuang¹, Gao Fei², Guo Zhenhu¹, Zhao Lingyun¹  
¹Tsinghua University, China, ²Northwest University, China

--- Session 3: Sensing 1 --- Chair: K. Enpuku

**I3-1: Invited Talk**
The in-situ Detection of Magnetic Nanoparticles for Cell Sorting Device Using Magnetic Susceptibility Reduction  
Mean-Jue Tung, Industrial Technology Research Institute, Taiwan

**I3-2: Invited Talk**
A SQUID Biomagnetic Measurement System and Its Clinical Applications  
Y. Adachi¹ and S. Kawabata², ¹Kanazawa Institute of Technology, Japan, ²Tokyo Medical and Dental University, Japan

**O3-1**  
Flow Measurement of Magnetic Nanoparticles by HTS Three Channel-SQUID Array  
Saburo Tanaka, Moriki Kabasawa, Ryugo Ito, Toyohashi University of Technology, Japan

**O3-2**
Quantification of SPIONs by view line sequence in MRI  
Shuang Liu¹, Wenqi Qiu¹, Gabriel Maggiora Della², Akihiro Kuwahata¹, Moriaki Kusakabe¹, Pablo Irrazaval²,  
Masaki Sekino¹
¹The University of Tokyo, Japan, ²Pontifical Catholic University of Chile, Chile
November 6th, Tuesday PM

-- Session 4: Sensing 2 -- Chair: T. Uchiyama and S. Yabukami

L4-1: Lecture
High-sensitive magnetic sensor for biomedical applications
Tusyoshi Uchiyama, Nagoya University, Japan

I4-1: Invited Talk
All-in-one Spin Hall Magnetic Sensor
Yihong Wu, Yanjun Xu, Yumeng Yang, Mengzhen Zhang, and Ziyan Luo, National University of Singapore, Singapore

I4-2: Invited Talk
Magnetic particles for biomedical applications: From immunoassay to imaging
Shu-Hsien Liao, Taiwan Normal University, Taiwan

O4-1
Evaluation of bacteria using switching magnetic field
S. Yabukami1,2, H. Onodera2, Y. Sato2, K. Miyachi2, G. Endo2, M. Furuya1, H. Kanetaka1, Y. Miura3, H. Takahashi3, T. Kodama3, 1Tohoku University, Japan, 2Tohoku Gakuin University, Japan, 3 JNS Co., Ltd., Japan

O4-2
Effect of Viscosity on Harmonic Signals of Magnetic Nanoparticles for Temperature Measurement
A. L. Elrefai, T. Sasayama, T. Yoshida and K. Enpuku, Kyushu University, Japan

-- Session 5: Hyperthermia -- Chair: T. Yoshida

I5-1: Invited Talk
Magnetic Delivery Technology for the Application of Magnetotactic Bacteria on Hyperthermia
Changyou Chen1,2,3, Chuanfang Chen1,3, Linjie Chen1,2,3, Pingping Wang1,3, Long-Fei Wu1,4, Tao Song1,2,3
1Institute of Electrical Engineering, CAS, China, 2Graduate University of Chinese Academy of Sciences, China, 3France-China Bio-Mineralization and Nano-Structures Laboratory, China, 4Aix Marseille University, France

I5-2: Invited Talk
Large magnetic Fe3O4 nanoparticles and their applications
Jun Ding, National University of Singapore, Singapore

O5-1
Analysis on magnetization dynamics of magnetic nanoparticles for hyperthermia
Satoshi Ota1 and Yasushi Takemura2, 1Shizuoka University, Japan, 2Yokohama National University, Japan
Program: Poster Presentations, November 5th Monday PM  Chair: T. Sasayama and S. Ota

P-1
Three Dimensional Imaging of Magnetic Nanoparticles Utilizing Field Free Line and Multiple Pickup Coils
S. Hamanaga, T. Sasayama, T. Yoshida and K. Enpuku, Kyushu University, Japan

P-2
High speed 2D-MPI by AC Scanning Field
K. Nakashima, Y. Sanada and S. Tanaka, Toyohashi University of Technology, Japan

P-3
Evaluation of Third Harmonic Signals from Mobile and Immobilized Magnetic Nanoparticles for MPI
Takuru Nakamura, Oji Higashi, Takashi Yoshida, and Keiji Enpuku, Kyushu University, Japan

P-4
Dependence of harmonic signal intensity in magnetic particle imaging on particle size
Yu Ichikawa, Tsutomu Yamada, Satoshi Ota, Yasushi Takemura, Yokohama National University, Japan

P-5
A Magnetic Nanoparticle Concentration Measurement based on NMR Para-Shift
Silin Guo, Wenzhong Liu, Huazhong University of Science and Technology, China

P-6
Peak to Peak Voltage Detector Type MI Gradiometer for Magnetoencephalogram Measurement
Jiaju Ma, and Tsuyoshi Uchiyama, Nagoya University, Japan

P-7
Wash Free Detection of Biological Target Utilizing Magnetic Markers and MR Sensor
K. Irie, K. Akiyoshi, T. Yoshida, T. Sasayama, and K. Enpuku, Kyushu University, Japan

P-8
Low Temperature Measurement of Magnetic Nanoparticles
Shuai Wang, Wenzhong Liu, Silin Guo, Huazhong University of Science and Technology, China

P-9
Frequency dependence of wireless power transmission using Wiegand wire for implantable medical devices
Katsuki Takahashi, Tsutomu Yamada, Yasushi Takemura, Yokohama National University, Japan

P-10
Co-Zn ferrite nanoparticles modified with PEG and magnetic hyperthermia effect
Y. Takahashi, A. Oshima, K. Fujiwara, T. Ide, K. Kanda, T. Hashimoto, D. Aihara, Y. Sahashi, Y. Ito, Y. Ichiyanagi, Yokohama National University, Japan, Osaka University, Japan

P-11
Development of Wireless Temperature and Position Monitoring for Magnetic Hyperthermia using Pickup Coils
Loi Tonthat, Yoshiyuki Yamamoto, Fumitaka Aki, Hajime Saito, and Kazutaka Mitobe, Akita University, Japan, Iwate Medical University, Japan

P-12
High intrinsic loss power of multi-core magnetic nanoparticles for hyperthermia
Kizuku Nishimoto, Suko Bagus Trisnanto, Tsutomu Yamada, Satoshi Ota, Yasushi Takemura, Yokohama National University, Japan

P-13
Specific loss power of biocompatible magnetic nanoparticles for hyperthermia
Guannan Shi, Suko Bagus Trisnanto, Tsutomu Yamada, Satoshi Ota, Yasushi Takemura, Yokohama National University, Japan