

***International Symposium on Artificial Hydrogel Cartilage,
Joint Replacement and Related Topics
(ISAHC 2016)***

January 25 (Mon) – 26 (Tue), 2016.

Ito Guest House in Ito campus, Kyushu University, Fukuoka, Japan.

Symposium Program

[Day 1]

13:00–13:05 Opening Remark

Chair of Organizing Committee: Teruo Murakami (Kyushu Univ., Japan)

13:05–15:15 Artificial Cartilage

Chairpersons: Yoshinori Sawae & Markus A. Wimmer

[O1] 13:05–13:30

Teruo Murakami (Kyushu Univ., Japan)

KAKENHI Project: Elucidation of Adaptive Lubrication Mechanism with Low Friction and Minimum Wear in Natural Synovial Joints and Development of Artificial Hydrogel Cartilage with Super Lubricity Based on Bionic Design

[O2] 13:30–13:55

Atsushi Suzuki (Yokohama National Univ., Japan), Shun Nakamura, Saori Sasaki (Kyushu Univ., Japan), Teruo Murakami

Nano- and Micro-Scales Structures and Functions of Physically Crosslinked Poly(vinyl alcohol) Hydrogels

[K1] 13:55–14:35 - Keynote talk

Jian Ping Gong (Hokkaido Univ., Japan)

Tough Double Network Hydrogel and Its Cartilage Applications

[K2] 14:35–15:15 - Keynote talk

Nicholas D. Spencer (ETH Zurich, Switzerland)

Using Polymers to Mimic Cartilage

15:30–17:50 Joint Replacement and Cartilage
Chairpersons: Teruo Murakami & Gwidon W. Stachowiak

[O3] 15:30–15:50

Shuichi Matsuda (Kyoto Univ., Japan), Shinichi Kuriyama, Ken Okazaki (Kyushu Univ., Japan)

Computer Simulation in Total Knee Arthroplasty

[K3] 15:50–16:30 - Keynote talk

Zhongmin Jin (Southwest Jiaotong Univ., Xian Jiaotong Univ., China, Univ. of Leeds, UK)

Computational Modelling of Articular Cartilage and Applications to the Natural Hip Joint

[K4] 16:30–17:10 - Keynote talk

Markus A. Wimmer (Rush Univ., USA), Roberts Treviño, Michel P. Laurent, Anna Plaas, Susan Chubinskaya

A motion Simulator ("Bioreactor") which Uses Living Cartilage as Counterface

[K5] 17:10–17:50 - Keynote talk

Naohide Tomita (Kyoto Univ., Japan)

Bio-Environment Designing for Joint Function

18:30–20:30 Banquet at ITRI-ITO in Shiiki Hall, Kyushu University

"Welcome speech: Renshi Sawada (Director of Research Center for Advanced Biomechanics, Kyushu Univ., Japan)"

[Day 2]

9:15–12:00 Joint Replacement and Osteoarthritis
Chairpersons: Naohide Tomita & Zhongmin Jin

[O4] 9:15–9:40

Ken Okazaki (Kyushu Univ., Japan), Hideki Mizuuchi, Satoshi Hamai, Yukio Akasaki, Yukihide Iwamoto

Trends and Future Perspectives of Knee Replacement

[K6] 9:40–10:20 - Keynote talk

Gwidon W. Stachowiak (Curtin Univ., Australia), Marcin Wolski, Tomasz Woloszynski, Pawel Podsiadlo

Detection and Prediction of Osteoarthritis in Knee Joints Based on the x-Ray Image Analysis

[K7] 10:20–11:00 - Keynote talk

Kiyoshi Mabuchi (Kitasato Univ., Japan), Rina Sakai

Limit of Engineering in Joint Prostheses

[I1] 11:00–11:30 - Invited talk

Masayuki Kyomoto (Univ. of Tokyo, KYOCETA Medical Corporation, Japan)

Bio-Inspired Technology with Phospholipid Polymer-grafting Makes Life-long Durability of Orthopedic Bearings

[I2] 11:30–12:00 - Invited talk

Hideyuki Sakoda (National Institute of Health Sciences, Japan), Shingo Niimi

Emerging Technology Medical Devices and Regenerative Medicine Products in Reconstruction of Joint Function

12:00–13:00 Lunch

13:00–15:00 Cartilage and Artificial Cartilage

Chairpersons: Kiyoshi Mabuchi & Nicholas D. Spencer

[I3] 13:00–13:30 - Invited talk

Hiromichi Fujie (Tokyo Metropolitan Univ., Japan), Naoya Hashimoto, Ryosuke Nakamura

Site-, Direction-, and Maturity-Dependent Hydraulic Permeability of Articular Cartilage

[O5] 13:30–13:55

Nobuo Sakai (Kyushu Institute of Technology, Japan), Chie Hashimoto, Seido Yarimitsu (Tokyo Metropolitan Univ., Japan), Yoshinori Sawae (Kyushu Univ., Japan), Mochimitsu Komori (Kyushu Institute of Technology, Japan), Teruo Murakami (Kyushu Univ., Japan)

Biphasic Lubrication of Articular Cartilage and Its Application to Artificial Cartilage

[O6] 13:55–14:20

Seido Yarimitsu (Tokyo Metropolitan Univ., Japan), Ayumi Yoshida (Kyushu Univ., Japan), Saori Sasaki, Teruo Murakami, Atsushi Suzuki (Yokohama National Univ., Japan)

Development of Hydrogel Artificial Cartilage Materials with Low Friction and Minimum Wear

[O7] 14:20–14:40

Saori Sasaki (Kyushu Univ. Japan), Teruo Murakami, Atsushi Suzuki (Yokohama National Univ., Japan)

Improvement of Frictional Properties of Physically Cross-linked PVA Hydrogels as Artificial Cartilage

[O8] 14:40–15:00

Renshi Sawada (Kyushu Univ., Japan), Terukazu Akiyama

Doppler Sensors for the Measurement of Synovial Fluid Flow

15:15–16:50 Hydrogels and Adsorbed Film

Chairpersons: Atsushi Suzuki & Hiromichi Fujie

[O9] 15:15–15:40

Yoshinori Sawae (Kyushu Univ., Japan), Ryosuke Baba, Takehiro Morita, Tetsuo Yamaguchi, Martin Vrbka (Brno University of Technology, Czech), Filip Urban, David Nečas, Seido Yarimitsu (Tokyo Metropolitan Univ., Japan), Kazuhiro Nakashima (Kyushu Univ., Japan), Teruo Murakami, Martin Hartl (Brno University of Technology, Czech)

Friction Characterization of Hydrogel Acetabular Liner for Hip Joint Prosthesis

[O10] 15:40–16:05

Tetsuo Yamaguchi (Kyushu Univ., Japan), Ryuichiro Sato, Yoshinori Sawae, Teruo Murakami
Fatigue and Wear of Hydrogels

[O11] 16:05–16:25

Seiji Omata (Kyushu Univ., Japan), Yoshinori Sawae, Teruo Murakami

Assessment of Macrophage Immune Response on Wear Particles of PVA Hydrogel

[O12] 16:25–16:50

Kazuhiro Nakashima (Kyushu Univ., Japan), Yoshinori Sawae, Susumu Kudo, Teruo Murakami

Formation Process and Characteristic of Protein Film on Joint Prosthesis Material

16:50–17:00 Closing Remarks

Chair of Organizing Committee: Teruo Murakami (Kyushu Univ., Japan)