

Preface

Bioceramics 30, the 30th anniversary edition of the Symposium and Annual Meeting of the International Society for Ceramics in Medicine, was held in Nagoya, Japan, from the 26th of October to the 29th, 2018. It is our great honor to organize the 30th anniversary edition of the conference in Japan since the first holding of the conference in Kyoto, Japan, in 1988 by the late Hironobu Oonishi. The conference has gathered more than 200 participants from 22 countries, we had 4 plenary lectures, 12 keynote lectures, 64 regular oral communications and 92 poster presentations to discuss the exciting advances in basic and applied research and application of ceramics in medicine. Intensive discussion among participants with different background will bring innovative ideas and strategic development for next generation bioceramics and their related technology. This volume contains 45 papers from the all presentations at Bioceramics 30 after peer-review by the reviewing committee. We give a special thanks to those who made efforts to provide a paper regarding their contribution at Bioceramics 30 and the members of this committee.

We believe that one important role of the conference is to provide opportunities for students and young researchers to promote their own development in the professional forum of an international meeting, which will lead to the continuous development of the field of bioceramics. In Bioceramics 30, we received 80 contributions from students. We expect that the number of young participants will increase in the future Bioceramics conference.

We received sponsorship and support from Nagoya University, Graduate School of Engineering, Nagoya University, the Uehara Memorial Foundation and Tokuyama Science Foundation. We also received endorsement from the Ceramic Society of Japan, the Japanese Society for Biomaterials, the Japan Society of Powder and Powder Metallurgy, The Japanese Orthopaedic Association and Orthopedics Biomaterials Bureau. We express our sincere gratitude to these foundations and societies for their help in the preparation of Bioceramics 30.

We sincerely hope that this volume will contribute to further progress in a field of bioceramics and help you to discover new horizons for research and development of bioceramics.

Chikara Ohtsuki

Hitoshi Hirata

Ayae Sugawara-Narutaki

Masakazu Kawashita

Masanobu Kamitakahara

Committees

Scientific Committee

Masakazu Kawashita	(Chair Japan)	Kunio Ishikawa	(Japan)
Masanobu Kamitakahara	(Vice Chair Japan)	Julian Jones	(UK)
Mamoru Aizawa	(Japan)	Toshihiro Kasuga	(Japan)
Iulian Antoniac	(Romania)	Masanori Kikuchi	(Japan)
Stamboulis Artemis	(UK)	Sampath Kumar	(India)
Jake Barralet	(Canada)	Toshiki Miyazaki	(Japan)
Allal Barroug	(Morocco)	Takashi Nakamura	(Japan)
Besim Ben-Nissan	(Australia)	Kyungsik Oh	(Korea)
Serena Best	(UK)	Makoto Otsuka	(Japan)
Adriana Bigi	(Italy)	Soren Overgaard	(Denmark)
Aldo Boccaccini	(Germany)	Rui Reis	(Portugal)
Marc Bohner	(Switzerland)	Christian Rey	(France)
Susmita Bose	(USA)	Sang-Hoon Rhee	(Korea)
Jiang Chang	(China)	Laurent Sedel	(France)
Guy Daculsi	(France)	Osamu Suzuki	(Japan)
Ika Dewi Ana	(Indonesia)	Anna Tampieri	(Italy)
Paul Ducheyne	(USA)	Kanji Tsuru	(Japan)
Ahmed El-Ghannam	(USA)	Hidero Unuma	(Japan)
Hakan Engqvist	(Sweden)	Maria Vallet-Regi	(Spain)
Maria-Pau Ginebra	(Spain)	Yin Xiao	(Australia)
Jaime Gomez Morales	(Spain)	Kimihiko Yamashita	(Japan)
Satoshi Hayakawa	(Japan)	Yoshiyuki Yokogawa	(Japan)

Local Organizing Committee

Chikara Ohtsuki (Chair)	Masanobu Kamitakahara
Hitoshi Hirata (Co-Chair)	Kunio Ishikawa
Ayae Sugawara-Narutaki (Co-Chair)	Masami Hashimoto
Toshihiro Kasuga	Ayako Oyane
Toshiki Miyazaki	Jin Nakamura
Masakazu Kawashita	

Reviewing Committee

Mamoru Aizawa	(Japan)	Hakan Engqvist	(Sweden)
Iulian Antoniac	(Romania)	Maria-Pau Ginebra	(Spain)
Stamboulis Artemis	(UK)	Jaime Gomez Morales	(Spain)
Jake Barralet	(Canada)	Satoshi Hayakawa	(Japan)
Allal Barroug	(Morocco)	Kunio Ishikawa	(Japan)
Besim Ben-Nissan	(Australia)	Julian Jones	(UK)
Serena Best	(UK)	Masanobu Kamitakahara	(Japan)
Adriana Bigi	(Italy)	Toshihiro Kasuga	(Japan)
Marc Bohner	(Switzerland)	Masakazu Kawashita	(Japan)
Susmita Bose	(USA)	Masanori Kikuchi	(Japan)
Jiang Chang	(China)	Toshiki Miyazaki	(Japan)
Guy Daculsi	(France)	Takashi Nakamura	(Japan)
Ika Dewi Ana	(Indonesia)	Kyungsik Oh	(Korea)
Ahmed El-Ghannam	(USA)	Chikara Ohtsuki	(Japan)

Makoto Otsuka	(Japan)	Osamu Suzuki	(Japan)
Rui Reis	(Portugal)	Kanji Tsuru	(Japan)
Christian Rey	(France)	Hidero Unuma	(Japan)
Sang-Hoon Rhee	(Korea)	Yin Xiao	(Australia)
Laurent Sedel	(France)	Kimihiro Yamashita	(Japan)
Ayae Sugawara-Narutaki	(Japan)	Yoshiyuki Yokogawa	(Japan)

Bioceramics Symposia

Year	President	Location
1988	Hironobu Oonishi	Kyoto Japan
1989	Gunther Heimke	Heidelberg Germany
1990	Samuel F. Hulbert	Terre Haute USA
1991	William Bonfield	London UK
1992	Takao Yamamuro	Kyoto Japan
1993	Paul Ducheyne	Philadelphia USA
1994	Antti Yli-Urpo	Turku Finland
1995	Larry L. Hench	Ponte Vedra USA
1996	Tadashi Kokubo	Otsu Japan
1997	Laurent Sedel	Paris France
1998	Raquel Z. LeGeros	New York USA
1999	Hajime Ohgushi	Nara Japan
2000	Antonio Moroni	Bologna Italy
2001	Ian C. Clarke	Palm Spring USA
2002	Besim Ben Nissan	Sydney Australia
2003	Mario A. Barbosa	Porto Portugal
2004	Panjian Li	New Orleans USA
2005	Takashi Nakamura	Kyoto Japan
2006	Xingdong Zhang	Chengdu China
2007	Guy Daculsi	Nantes France
2008	Marcelo H. Prado da Silva	Buzios Brazil
2009	Sukyoung Kim	Daegu South Korea
2011	Eyup Sabri Kayali	Istanbul Turkey
2012	Kunio Ishikawa	Fukuoka Japan
2013	Iulian Antoniac	Bucharest Romania
2014	Maria-Pau Ginebra	Barcelona Spain
2015	Ika Dewi Ana	Bali Indonesia
2016	Ahmed El-Ghannam	Charlotte USA
2017	Christian Rey	Toulouse France
2018	Chikara Ohtsuki	Nagoya Japan

Sponsors



Graduate School of Engineering



公益財団法人 徳山科学技術振興財団
TOKUYAMA SCIENCE FOUNDATION



整形外科バイオマテリアル研究会
Orthopedics Biomaterial Bureau