Special Symposium
“Symposium on Biomaterials and Bionanotechnology”
in
International Conference on Multifunctional Materials and Structures (MFMS2008)
28-31 July 2008, Hong Kong

The development of new biomaterials involves the application of engineering principles to life sciences. It is an interdisciplinary endeavor requiring the participation of researchers from many disciplines. Nanotechnology has advanced rapidly in recent decades. It has tremendous potential for applications in the biomedical field. This symposium will focus on the R & D in biomaterials and bionanotechnology. It will encompass materials and systems which replace or help to regenerate human body tissues in order to restore tissue functions. These materials include metals, polymers, ceramics (including glass and glass-ceramics) and composites and may take the form of particulate, membrane, coating, or bulk shapes. Specific areas of interest are bioactive materials, biodegradable materials, drug and gene delivery systems, scaffolds for tissue engineering and biomedical sensors. Presentations on clinical investigation/assessment of new biomaterials and advances in tissue engineering are also an important part of the symposium.

Abstract Submission

For those who are interested in submitting papers to this symposium, please use the symposium’s abstract template (downloadable http://www.a-tech.hk/MFMS2008/Abstract%20Template_Bio.doc) to prepare the abstracts and submit completed abstracts (in the Microsoft Word format) through email to one of the three symposium chairmen directly.

The detailed information about the conference can be found at http://www.a-tech.hk/MFMS2008/Index.htm.

Important Dates

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<td>Acceptance Notification</td>
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<td>Full-length Paper (for the conference proceedings) Submission Deadline</td>
<td>30 April 2008</td>
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<td>Final Program Published</td>
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Publication

All submitted papers will be reviewed and papers accepted for presentation will be bound in a Proceedings of Advanced Materials Research.

A Special Issue of Biomedical Materials (www.bmm.iop.org, which is a peer-reviewed journal and has been included in Science Citation Index Expanded, available at the ISI Web of Science) will be
published on biomaterials and bionanotechnology after the conference for presenters in the special symposium who wish to submit full-length papers. Normal peer-review procedure will apply to the submitted papers. Details on submitting full-length papers to the Special Issue will be available in due course.

Registration Fee

**Full Registration:**
- US $ 450 (or HK$ 3,500) Before 30 April 2008
- US $ 500 (or HK$ 3,900) After 30 April 2008
- US $ 520 (or HK$ 4,050) On-site Registration

**Student Registration:**
- US 240 (or HK$ 1,900) Before 30 April 2008
- US 260 (or HK$ 2,030) After 30 April

Symposium Chairs

Min Wang, PhD  
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Atomic-scale Surface Science Research Center, Yonsei University, Seoul, Korea  
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International Scientific Committee

Xiao-Feng Chen, PhD, South China University of Technology, China  
Xiao-Nong Chen, PhD, Beijing University of Chemical Technology, China  
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Nan Huang, PhD, Southwest Jiao Tong University, China  
In-Seop Lee, PhD, Yonsei University, Korea  
Yang Leng, PhD, Hong Kong University of Science and Technology, Hong Kong, China  
Jun Li, PhD, National University of Singapore, Singapore  
Feng-Huei Lin, PhD, National Taiwan University, Taiwan  
Chang-Sheng Liu, PhD, East China University of Science and Technology, China  
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John A. Nychka, PhD, University of Alberta, Canada  
Chikara Ohtsuki, PhD, Nagoya University, Japan  
Krishnendu Roy, PhD, University of Texas at Austin, U.S.A.  
Andrew J. Ruys, PhD, University of Sydney, Australia  
Lucy Di Silvio, PhD, King's College, University of London, U.K.  
Min Wang, PhD, University of Hong Kong, Hong Kong, China  
Guang-Fu Yin, PhD, Sichuan University, China  
Sheng-Min Zhang, PhD, Huazhong University of Science and Technology, China
Symposium Programme

Symposium on Biomaterials and Bionanotechnology at MFMS2008
Hong Kong, July 28-31, 2008

Oral Presentations

Day 1 - Monday, 28 July

SESSION 1: (Venue: TBC)

Session Chairs: Fu-Zhai Cui (Tsinghua University, China) & Min Wang (University of Hong Kong, Hong Kong)

10:30~11:00 Hyaluronic Acid Hydrogel modified with AntiNgR and PLL for Central Neural Repair (SBB-072) (Invited Talk)
Fu-Zhai Cui, Yue-Teng Wei (Tsinghua University, China)

11:00~11:30 Developing biomedical composites: what have we achieved and where are we headed? (SBB-047) (Invited Talk)
Min Wang, (University of Hong Kong, Hong Kong)

11:30~11:45 Kinetic Effect of Cationic Comb-type Copolymers on DNA Hybridization (SBB-032)
Atsushi Maruyama, Longliang Wu, Naokiko Shimada, Arihiro Kano (Kyushu University, Japan)

11:45~12:00 Plasma polymerized thin-films for biosensors (SBB-041)
Chin-Chuan Chang, Shu-Ling Wang, Wen-Chi Tseng, Meng-Jiy Wang (National Taiwan University of Science and Technology, Taiwan)

12:00~12:15 Study on blood compatibility of SIS modified by plasma surface grafting (SBB-043)
Yan-Fei Zhao, Xiu-Fen Wang (Beijing University of Chemical Technology, China)

12:15~12:30 Preparation of Lactic Acid Based Polyurethanes Modified By Castor Oil (SBB-074)
Biao Fu, Lin Xiao, Long-jiang Yu, Guang Yang (Huazhong University of Science and Technology, China)

SESSION 2: (Venue: TBC)

Session Chairs: I.-S. Lee (Yonsei University, Korea) & Xiaonong Chen (Beijing University of Chemical Technology, China)

14:20~14:50 Protein incorporated calcium phosphate thin film (SBB-070) (Invited Paper)
I.-S. Lee, Y. Li, S.-H. Choi, S.-M. Chung, F.-Z. Cui (Yonsei University, Korea)

14:50~15:20 Surfaces modified by amphiphilic copolymer: preparation and application (SBB-007) (Invited Talk)
Xiaonong Chen, Zaiqian Qi, Yaqin Huang, Robert Pelton, Raja Ghosh (Beijing
15:20–15:35 Nano-cellulose as promising biocarrier (SBB-001)
Michael Ioelovich, Oleg Figovsky (Polymate Ltd, Israel)

15:35–15:50 Irradiation of synthesized magnetic nanoparticles and its application for hyperthermia (SBB-004)
Kwo-Ping Chang, Ching-Han Cheng, Ying-Chi Chiang, Shan-Chih Lee, Zhi-Yuan Lin, Bor-Tsung Hsieh, Ching-Chio Ko, Ya-Ling Huang (Chung-Shan Medical University, Taiwan)

15:50–16:00 Free discussions.

SESSION 3: (Venue: TBC)
Session Chairs: Insup Noh (Seoul National University of Technology, Korea) & Shengmin Zhang (Huazhong University of Science and Technology, China)

16:20–16:50 Cyclotron ion beam irradiation on biomedical polymers and its applications (SBB-037) (Invited Talk)
Insup Noh, Yoon Jeong Choi, Hyun Ki Kang, Sung-Jae Lee (Seoul National University of Technology, Korea)

16:50–17:20 Fibrous poly(chitosan-g-DL-lactic acid) scaffolds prepared via electro-wet-spinning (SBB-033) (Invited Talk)
Ying Wan, Xiaoying Cao, Shengmin Zhang, Sheng Wang, Quan Wu (Huazhong University of Science and Technology, China)

17:20–17:35 Electrospinning nanocomposite nanofibers of hydroxyapatite/chitosan (SBB-040)
Y.Z. Zhang, B. Su, C.T. Lim (National University of Singapore, Singapore)

17:35–17:50 An Investigation into Dual-source and Dual-power Electrospinning of Nanofibrous Membranes for Medical Applications (SBB-073)
Jia-Chen Kang, Min Wang, Xiao-Yan Yuan (University of Hong Kong, Hong Kong)

17:50–18:05 Bio-fabrication of patterned cellulose nano-fibers (SBB-035)
Gang Wang, Xufeng Chen, Xudian Shi, Longjiang Yu, Bifeng Liu, Guang Yang (Huazhong University Science and Technology, China)

18:05–18:20 Distinctive degradation behaviors of electrospun PGA, PLGA and P(LLA-CL) nanofibers cultured with/without cell culture (SBB-016)
Yixiang Dong, Susan Liao, S. Ramakrishna, Casey K. Chan (National University of Singapore, Singapore)
**Day 2 - Tuesday, 29 July**

**SESSION 4: (Venue: TBC)**

*Session Chairs: Feng-Huei Lin (National Taiwan University, Taiwan) & Xiaofeng Chen (South China University of Technology, China)*

10:30–11:00  The Study of Magnetic Biodegradable Bioglass for Tumor Hyperthermia (SBB-071) (Invited Talk)  
**Feng-Huei Lin** (National Taiwan University, Taiwan)

11:00–11:30  Template-assisted synthesis of nano-clusters of bioactive glasses (SBB-029) (Invited Talk)  
**Xiaofeng Chen, Changliang Guo, Naru Zhao, Yuli Li** (South China University of Technology, China)

11:30–11:45  Protein adsorption behavior on hydroxyapatite in solution containing two proteins (SBB-039)  
**Giichiro Kawachi, Tomoko Watanabe, Koichi Kikuta, Chikara Ohtsuki** (Nagoya University, Japan)

11:45–12:00  In vitro bioactivity of potassium titanate whiskers (SBB-027)  
**Yanbao Li, Qing Lin, Junsheng Chen, Xianghui Lan, Chunhua Lu, Dongxu Li, Zhongzi Xu** (Nanjing University of Technology, China)

12:00–12:15  An experimental and computational study on Zn-substituted hydroxyapatite (SBB-044)  
**Fuzeng Ren, Renlong Xin, Xiang Ge, Yang Leng** (Hong Kong University of Science and Technology, Hong Kong)

12:15–12:30  An Evaluation of CaF$_2$ Doping Tricalcium Silicate as Dental Restorative Materials (SBB-020)  
**Zhongzi Xu, Qing Lin, Yanbao Li, Xianghui Lan, Chunhua Lu** (Nanjing University of Technology, China)

**SESSION 5: (Venue: TBC)**

*Session Chairs: Zhong-Ze Gu (Southeast University, China) & John A. Nychka (University of Alberta, Canada)*

14:20–14:50  Bioassay based on photonic crystal (SBB-012) (Invited Paper)  
**Xiang-Wei Zhao, Hua Xu, Zhong-Ze Gu** (Southeast University, China)

**John A. Nychka, Ding Li** (University of Alberta, Canada)

15:20–15:35  Novel organic-inorganic hybrid nanoparticles as non-viral gene vector (SBB-011)  
**Yang Zhao, Pei Yin, Zu-Yong Wang, Lei Ren, Qi-qing Zhang** (Xiamen University, China)

15:35–15:50  Insertion behavior of microneedles for drug delivery (SBB-067)  
**K.T. Shek, David C.C. Lam** (Hong Kong University of Science and Technology, Hong Kong)

15:50–16:00  Free discussions.
Day 3 - Wednesday, 30 July

**SESSION 6: (Venue: TBC)**

*Session Chairs: Nan Huang (Southwest Jiaotong University, China) & Yu-Feng Zheng (Peking University, China)*

10:30–11:00 Surface modification of cardiovascular biomaterials: from biocompatible to biomimetic (SBB-052) (Invited Talk)

*Nan Huang, Junying Chen, Ping Yang, Yongxiang Leng, Jin Wang, Quanli Li (Southwest Jiaotong University, China)*

11:00–11:30 In vitro and in vivo biocompatibility studies of nano TiO₂ materials (SBB-066) (Invited Talk)

*Wei Han, Yue-Dan Wang, Yu-Feng Zheng (Peking University, China)*

11:30–11:45 Novel silicon based anodic spark deposition treatment for dental implant (SBB-064)

*L.Sarinnaphakorn, P.Mesquida, R.Chiesa, C.Giordano, M.Fenlon, L. Di Silvio, (King’s College London Dental Institute, UK)*

11:45–12:00 Microstructure control and pseudoelasticity of Ti-Nb-Ge alloy (SBB-068)

*Won-Yong Kim, Han-Sol Kim (Korea Institute of Industrial Technology, Korea)*

12:00–12:15 Investigation of platelet adhesion behavior on Si-N-O films synthesized by unbalanced magnetron sputtering (SBB-053)

*Shao Zhenyi, Yang Ping, Leng Yongxiang, Zhang Qi, Wan Guojiang, Sun Hong, Cai Guangjun, Huang Nan, (Southwest Jiaotong University, China)*

12:15–12:30 Adsorption CD34 antibody onto the col/hep coating film on titanium to improve cytocompatibility of titanium (SBB-054)

*Jialong Chen, Quanli Li, Junying Chen, Nan Huang (Southwest Jiaotong University, China)*

**SESSION 7: (Venue: TBC)**

*Session Chairs: Changsheng Liu (East China University of Science and Technology, China) & Jun Li (National University of Singapore, Singapore)*

14:20–14:50 Biocompatibility and osteogenesis of calcium phosphate cement scaffolds for bone tissue engineering (SBB-045) (Invited Paper)

*Han Guo, Jie Wei, Hang Kong, Changsheng Liu, Kefeng Pan (East China University of Science and Technology, China)*

14:50–15:20 Hydrolytic degradation and protein release studies of new thermogelling polyurethane copolymers consisting of PHB, PEG, and PPG (SBB-065) (Invited Talk)

*Jun Li, Xian Jun Loh (National University of Singapore, Singapore)*


*Naznin Sultana, Min Wang (University of Hong Kong, Hong Kong)*

15:35–15:50 Poly(L-lactide)/multiwalled carbon nanotube composites: mechanical properties and interaction with osteoblast-like cells in vitro (SBB-024)

*Brian Yu Fung Pow, Arthur Fuk Tak Mak, Man Sau Wong, Mo Yang (Hong Kong)*
Kong Polytechnic University, Hong Kong)
15:50~16:00 Free discussions.

SESSION 8: (Venue: TBC)
Session Chairs: Min Ho Lee (Chonbuk National University, Korea) & Jiao Sun (Shanghai Jiao tong University, China)

16:20~16:35 Surface characteristics of magnesium alloys treated by anodic oxidation using pulse power (SBB-002)
Yu Kyong Kim, Man Hyung Lee, Madhav Nepane Prasad, Il Song Park, Min Ho Lee, Kyeong Won Seol, Tae Sung Bae (Chonbuk National University, Korea)

16:35~16:50 MCP-1 expression associated with inflammation and biomaterials (SBB-061)
Tingting Ding, Jiao Sun, Ping Zhang (Shanghai Jiaotong University, China)

16:50~17:05 Characteristics and chemical stability of bioactive titania layer formed on Ti, Ti-6Al-4V and NiTi SMA through a low temperature oxidation process (SBB-051)
Sun Tao, Min Wang (University of Hong Kong, Hong Kong)

17:05~17:20 Near-IR sensitive Au-Au$_2$S nanoparticles with biocompatibility for drug delivery (SBB-010)
Wen Liu, Zu-yong Wang, Pei Yin, Lei Ren, Qi-qing Zhang (Xiamen University, China)

17:20~17:35 Totally biodegradable and osteoconductive composite material consisting of polyhydroxybutyrate and tricalcium phosphate for bone tissue repair (SBB-049)
Ya Liu, Min Wang (University of Hong Kong, Hong Kong)

17:35~17:50 Electrochemical Deposition of Fluoridated Calcium Phosphate Thin Film on Titanium Substrates (SBB-046)
Xiang Ge, Fuzeng Ren, Yang Leng (Hong Kong University of Science and Technology, Hong Kong)

17:50~18:05 The biomedical material of functional ePTFE hydrogels by the cold plasma method and radiation technique (SBB-062)
Te-Hsing Wu, Ko-Shao Chen, Su-Chen Chen, Yi-Chun Yeh, Lie-Hang Shen (Institute of Nuclear Energy Research, Taiwan)

18:05~18:20 Conference group-photo taking session.
Symposium Programme

Symposium on Biomaterials and Bionanotechnology at MFMS2008
Hong Kong, July 28-31, 2008

Poster Session

Tuesday, 29 July
(16:20-18:20pm)

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<td>Bone-implant contact of surface-modified titanium implants (SBB-003)</td>
<td>Nam Gyu Kim, Il Song Park, Ho Keun Yi, Seung Geun Ahn, Kwang Yeob Song, Tae Sung Bae, Min Ho Lee (Chonbuk National University, Korea)</td>
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<td>2</td>
<td>Effect of pH value on synthesis of calcium phosphates (SBB-006)</td>
<td>Yaqin Huang, Lujun Sun, Aihua He, Qin Qin Wang, Charles C. Han</td>
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<td>(Beijing University of Chemical Technology, China)</td>
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<td>A retrievable polymer urethral stent for treatment of urethral strictures (SBB-017)</td>
<td>Zi-Qiang Zhang, Kun Hu, Hong-Xu Huo, Kang-Ning Chen, Bo Meng, Fu-Zhai Cui (Beijing Allgens Medical Science &amp; Technology Co., China)</td>
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<td>Activation of MAPK and NF-κB induced by biomaterials in vascular endothelial cells (SBB-018)</td>
<td>Jiao Sun, Xinning Mu, Tingting Ding (Shanghai Jiaotong University, China)</td>
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<td>Construction of nonbiofouling biofunctional glass surface by self-assembled monolayer and graft hydrophilic polymer (SBB-022)</td>
<td>Zongbin Liu, Bei Zhang, Brian Yu Fung Pow, Mo Yang, Arthur Fuk Tak Mak (Hong Kong Polytechnic University, Hong Kong)</td>
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<td>6</td>
<td>The design of novel scaffolds by integrating microbial cellulose onto plasma treated polypropylene (SBB-042)</td>
<td>Nani Wibowo, Meng-Jiy Wang, Chin-Chuan Chang, Cheng-Kang Lee (National Taiwan University of Science and Technology, Taiwan)</td>
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<td>7</td>
<td>Deformation and fracture of bone analogue biomaterials having different polymer matrices (SBB-048)</td>
<td>Min Wang, Ya Liu, Chun-Ling Au, Pik-Ki Lai, Lai Yee Leung, Boon-Heng Chua (University of Hong Kong, Hong Kong)</td>
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<td>8</td>
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<td>Lanxin Xu, Peng Li, Jin Wang, Yongxiang Leng, Hong Sun,</td>
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<td>9</td>
<td>Studying the restenosis after percutaneous transluminal coronary angioplasty (PTCA) in the organ culture system (SBB-057)</td>
<td>Ansha Zhao, Haiyan Zhang, Junying Chen, Nan Huang</td>
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<td>Influence of hydrogen-plasma treatment on blood compatibility of titanium oxide films (SBB-063)</td>
<td>Yang Zhonghai, Xu Yi, Yang Ping, Leng Yongxiang, Huang Nan</td>
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<td>Effect of oxygen content on microstructure and mechanical properties of Ti-Nb-Ge alloys for biomedical application (SBB-069)</td>
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<td>Study on apoptosis of rat macrophages induced by hydroxyapatite nanoparticles (SBB-019)</td>
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<td>Microplotting polycaprolactone-apatite 3D scaffolds with defined pore configuration (SBB-025)</td>
<td>Hae-Won Kim, Seok-Jung Hong, I-Shik Jeong, Yuna Lee, Hye-Sun Yu, Hae-Hyoung Lee, Jun-Hyeog Jang</td>
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<td>16</td>
<td>In vitro properties of biopolymer hybrid membrane with bioactive glass for guided tissue regeneration (SBB-026)</td>
<td>Hae-Won Kim, Hye-Sun Yu, Seok-Jung Hong, Yuna Lee, I-Shik Jeong, Hae-Hyoung Lee, Jun-Hyeog Jang</td>
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<td>Microstructure and bio-mineralization behavior of micro-arc oxidized titanium (SBB-028)</td>
<td>Kaihui Nan, Jia Qu, Fan Lu, Xiaofeng Chen, Chengyun Ning</td>
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<td>Qing-Hua Chen, Xing-Hua Pan, Kun Yu Zhao, Shen Jing</td>
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<td>21</td>
<td>Surface characterization and in vitro blood compatibility of plasma-polymerized acrylic acid films (SBB-058)</td>
<td>Fengjuan Jing, Jin Wang, Tao Tao, Hong Sun, Yongxiang Leng, Junying Chen, Nan Huang (Southwest Jiaotong University, China)</td>
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<td>22</td>
<td>Surface heparinization and hemocompatibility of biomedical stainless steel modified by plasma polymerized allylamine film (SBB-059)</td>
<td>Zhilu Yang, Sun Hong, Nan Huang, Jin Wang (Southwest Jiaotong University, China)</td>
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<td>23</td>
<td>The effects of oxygen deficiency on the hemocompatibility of titanium oxide films (SBB-060)</td>
<td>Yifeng Lei, Guicai Li, Zhonghai Yang, Yongxiang Leng, Hong Sun, Nan Huang (Southwest Jiaotong University, China)</td>
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