

参加募集

第3回バイオミメティック材料プロセッシング国際シンポジウム Third International Symposium on Biomimetic Materials Processing (BMMP-3)

主催：日本学術振興会・素材プロセッシング第69委員会

協賛：日本学術振興会・未来開拓学術研究推進事業
研究プロジェクト「バイオミメティック材料プロセッシングの開発」
(JSPS - RFTF 99R13101)

日本学術振興会・薄膜第131委員会，プラズマ材料科学第153委員会
名古屋大学理工科学総合研究センター
名古屋大学・21世紀COEプログラム「自然に学ぶ材料プロセッシングの創成」
日本MRS (The Materials Research Society of Japan)

会期：2003(平成15)年1月27日(月) - 29日(水)

会場：名古屋大学“シンポジオン”および“豊田講堂”

(名古屋市千種区不老町，地下鉄東山線本山駅から徒歩約15分；

詳しくは <http://www.nagoya-u.ac.jp> 参照)

開催趣旨：現在，人類の活動によって生じる地球環境への悪影響が大きな社会問題となっている．材料工学の分野においても，エネルギー使用量が少なく，有害な排出物のないプロセスによって，使用後環境に排出されても問題とならない材料を合成することが重要である．このため，いわゆる環境調和型材料プロセスの開発が最優先課題となっている．

一方，動物の歯や骨，貝殻，珊瑚，真珠，イネ科をはじめ各種植物中のプラント・オパール，珪藻・放散虫などのオパール骨格，磁性細菌中のマグネタイト微粒子などに見られるように，生物は常温・常圧で無機結晶を合成している．これらの生体内セラミックス合成プロセス，いわゆるバイオミネラル化(バイオミネラリゼーション，biomineralization)は，環境への負荷が極めて小さいことが特長である．このバイオミネラル化を人工的に模倣することが可能になれば，理想的な環境調和型の材料プロセスが実現する．

このように，「生物の生み出す物質，構造，機能，プロセスなどを学び，理解し，洗練させることにより，新しい機能材料をデザインし，創製すること」を，「バイオミメティック材料プロセッシング」と呼ぶ．本国際シンポジウムは，「バイオミメティック材料プロセッシング」に関する第3回目の国際会議である．現在，日本学術振興会・未来開拓学術研究推進事業・研究プロジェクト「バイオミメティック材料プロセッシングの開発」(高井プロジェクト)(JSPS - RFTF 99R13101)が進行中であり，このプロジェクトに連動させ，本国際シンポジウムを開催する．

本国際シンポジウムにおいては，材料工学，生物，化学，物理，医学，歯科学などをはじめとする幅広い分野の研究者・技術者を集い，関連する討議を行いたい．さらに，バイオミメティック材料プロセッシングの工学的応用について，また工業的用途および工業化に適したバイオミメティック・プロセスについて議論したい．

本国際シンポジウムを通し，「バイオミメティック材料工学」とも呼ぶべき，生物科学と材料工学の融合によって生まれる新しい研究分野，さらに工業分野の構築をめざしたい．

トピックス：

- I. バイオミメティック材料プロセスの基礎（自己組織化，分子認識，バイオミネラリゼーション，プロセスミメティックス，機能ミメティックス，評価法，ナノ構造形成，パターンング，輸送現象，膜，細胞など）
- II. バイオマテリアル，バイオミメティックマテリアル，生物から着想した材料（機能，かたち，構造，性質，複合材料など）
- III. 応用（医学への応用，薬学への応用，光学への応用，電子工学への応用，機械工学への応用，化学への応用，コーティング，人工骨，人工歯，人工皮膚，人工神経，人工臓器，はっ水性・親水性処理など）
- IV. 関連分野（センサー，バイオセンサー，太陽電池，光触媒，エレクトロクロミズム，フォトクロミズム，DNAチップ，化学的ICチップ，マイクロマシン，マイクロ反応器，生体エネルギー，シミュレーション，エコロジカルデザインなど）
- V. 評価法（走査プローブ顕微鏡，電子顕微鏡，レーザー分光学など）

スケジュール：

- 1月27日（月）開会式，口頭発表，ポスター発表（兼，ウエルカムパーティ）
- 1月28日（火）口頭発表，ポスター発表，交流会
- 1月29日（水）口頭発表，ポスター発表，閉会式

使用言語：英語

発表形式：口頭発表およびポスター発表

英文アブストラクト提出締め切り：2002年12月31日

題目，著者名（発表者に下線），所属名，住所，発表者電子メールアドレス，本文（300語以上）を記載した，A4版，1ページ（横16cm，縦24cmの枠内）のアブストラクトを，電子メールで提出して下さい。

宛先：bmmp@plasma.numse.nagoya-u.ac.jp

プロシーディングス：国際学術誌にて刊行予定。

参加費：一般 20,000円，学生 2,000円（アブストラクト集を含む）
交流会 2,000円

申込方法：氏名，所属，連絡先（住所，電話番号，ファックス番号，電子メールアドレス）を明記の上，電子メールまたはファックスにてお申し込み下さい。なお，参加費は，当日現金にて，あるいは請求書記載の銀行口座あてお支払い下さい。

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BMMP-3 PROGRAM

Monday, January 27

REGISTRATION (09:00 - 18:00) Registration Desk

OPENING REMARKS (10:00 - 10:10) Symposion Hall

10:00 - 10:10* O. Takai (Nagoya University, Japan; Chairperson of BMMP-3)

ORAL PRESENTATION (10:05 - 11:50) Symposion Hall

10:10 - 10:50 I. A. Aksay (Princeton University, USA)

SELF-REPAIRING MATERIALS WITH THE USE OF COMPLEX FLUIDS

10:50 - 11:30 S.I.Stupp (Northwestern University, USA)

11:30 - 11:50 Y. Ohko* **, T. Fujii*, K. Naoi*, T. Tatsuma*, and A. Fujishima*, (*The University of Tokyo, **PRESTO, Japan Science and Technology Corporation (JST), Japan)
MULTICOLOUR PHOTOCHROMISM OF TiO₂ FILMS LOADED WITH SILVER NANOPARTICLES

Lunch (11:50 - 13:00)

ORAL PRESENTATION (13:00 - 15:00) Symposion Hall

13:00 - 13:40 C. D. Montemagno (University of California, USA)

13:40 - 14:20 K. Ikuta (Nagoya University, Japan)

14:20 - 14:40 J. Kikuchi (Nara Institute of Science and Technology(NAIST), Japan)

ARTIFICIAL SIGNAL TRANSDUCTION SYSTEMS INSPIRED BY BIOLOGICAL INFORMATION PROCESSING

14:40 - 15:00 H. Endo and T. Watanabe (The University of Tokyo, Japan)

CRUSTOCALCIN : A PROTEIN WITH A GLUTAMATE-RICH REGION EXPRESSED PRIOR TO THE CALCIFICATION OF THE EXOSKELETON OF A DECAPOD CRUSTACEAN PENAEUS JAPONICUS

Break (15:00 - 15:10)

ORAL PRESENTATION (15:10 - 17:30) Symposion Hall

15:10 - 15:30 Y. Takamura M. Ueda, Y. Baba and Y. Horiike (The University of Tokyo, Japan)

ELECTRIC AND HYDRAULIC FORCE TRAP FOR ON-CHIP DNA PURIFICATION AND CONCENTRATION

15:30 - 15:50 H. Kagami and M. Ueda (Nagoya University, Japan)

TISSUE ENGINEERING AS A METHOD TO REGENERATE BIOARTIFICIAL ORGAN

15:50 - 16:10 M. Yamato (Tokyo Women's Medical University, Japan)

CELL SHEET ENGINEERING WITH INTELLIGENT CULTURE SURFACES

First Circular and Call for Papers

Third International Symposium on Biomimetic Materials Processing (BMMP-3)

Symposium and Toyota Auditorium, Nagoya University
Nagoya, Japan

January 27 (Mon) – 29 (Wed), 2003

Organized by
69th Committee on Materials Processing and Applications
Japan Society for the Promotion of Science

In Cooperation with
Research Project "Biomimetic Materials Processing" (No. JSPS-RFTF
99R13101), Research for the Future (RFTF) Program
Japan Society for the Promotion of Science
131st Committee on Thin Films and 153rd Committee on Plasma Materials
Science, Japan Society for the Promotion of Science
Center for Integrated Research in Science and Engineering, Nagoya University
The 21st Century COE Program "Nature-Guided Materials Processing",
Nagoya University
The Materials Research Society of Japan (MRS-J)

Web site:<http://plasma.numse.nagoya-u.ac.jp/bmmp3/>

Third International Symposium on Biomimetic Materials Processing (BMMP-3)

Third International Symposium on Biomimetic Materials Processing (BMMP-3) will be held on January 27-29, 2003 at "Symposion" and "Toyota Auditorium", Nagoya University, Nagoya, Japan after BMMP-1 in 2001 and BMMP-2 in 2002. The symposium is organized by 69th Committee on Materials Processing and Applications, Japan Society for the Promotion of Science in cooperation with the Research Project "Biomimetic Materials Processing" (No. JSPS-RFTF 99R13101), Research for the Future (RFTF) Program, Japan Society for the Promotion of Science, 131st Committee on Thin Films and 153rd Committee on Plasma Materials Science, Japan Society for the Promotion of Science, Center for Integrated Research in Science and Engineering, Nagoya University, The 21st Century COE Program "Nature-Guided Materials Processing", Nagoya University and The Materials Research Society of Japan (MRS-J).

Scope

Living organisms produce a wide variety of materials at room temperature and atmospheric pressure. Moreover, each produced material plays a key role in each function in biological systems. "Biomimetic materials processing (BMMP)" is defined as the design and synthesis of new functional materials by refining knowledge and understanding of related biological products, structures, functions and processes. Hence BMMP is not a simple imitation of biological materials processes, but is advanced materials processing for bionics, electronics, photonics, mechanics and so on. BMMP offers starting visions of materials processing for a sustainable future.

Generally speaking, unique features of materials processing in biological systems are as follows; first, preferential proceeding of reactions with time and space, and second, highly developed organization of fine structures and forms. This biological materials processing is actually performed by self-organization of molecular assemblies and molecular recognition at interfacial reaction sites. Therefore it is necessary to introduce the techniques of self-assembling and interfacial molecular recognition into BMMP.

In view of strong interests on the development of BMMP, the objective of this symposium is to provide an interdisciplinary forum for the discussion of recent advances in research, development, and applications of BMMP and related matters including "Biomimetics", "Biomimics" and "Biomimicry".

Symposium Topics

I. Basics of Biomimetic Materials Processing

(Self-organization, Molecular Recognition, Biomineralization, Process-mimetics, Function-mimetics, Characterization, Nano-structure Formation, Patterning, etc.)

II. Biomaterials, Biomimetic Materials and Biologically Inspired Materials

(Functions, Forms, Structures, Properties, Composites, etc.)

III. Applications

(Medical Applications, Pharmaceutical Applications, Optical applications, Electronic Applications, Mechanical Applications, Chemical Applications, Coating Applications, etc.)

IV. Related Topics

(Biosensor, Solar Cell, Photocatalysis, Simulation, Ecological Designs, etc.)

V. Characterization

(Scanning Probe Microscopy, Electron Microscopy, etc.)

Symposium Schedule

January 27 (Mon): Opening Ceremony, Symposium (Oral & Poster), Welcome Party
January 28 (Tue): Conference (Oral & Poster), Reception
January 29 (Wed): Conference (Oral & Poster), Closing Ceremony

Symposium Language

The official language of the symposium is English. All abstracts and manuscripts should be submitted in English. The conference lectures should also be presented in English.

Style of Presentation of Papers

All the invited lectures are presented orally.
Contributed papers are presented in poster.

Submission of Abstracts

Extended abstracts should be submitted by e-mail (address: bmmp@plasma.numse.nagoya-u.ac.jp) with a minimum length of 300 words and a maximum length of one page in a 16x24 cm frame. The title of the paper (please use capitals) should be followed by a new line with the authors' name(s), affiliation, address and e-mail address, underlining the presenting author.

The extended abstracts should be mailed to the conference secretariat **not later than December 31, 2002.**

Symposium Proceedings

The Proceedings of the symposium will be published in a special issue of an international journal. All manuscripts will be refereed as customary for original papers. Authors will be informed about the length and the details for the preparation of the manuscripts upon acceptance of their contributions.

Venue

Nagoya with its population of more than two millions is the biggest city in central Japan and is located at the center of Honshu Island (mainland) in Japan, 350 km west from Tokyo (Capital), 200 km east from Osaka and 150 km east from Kyoto. It takes only 1.5 hour from Tokyo and 50 minutes from Osaka by super express of Shinkansen. Nagoya is a modern and active city providing the largest motorcar production in Japan. Nagoya is famous for its beautiful Castle and Atsuta Shrine (one of three major shrines in Japan). This Conference may provide a good opportunity to discover the old and modern Japanese culture. The Conference is held at Symposium and Toyota Auditorium, Nagoya University near Motoyama Station of Higashiyama subway line.

Registration Fees

Participant	20,000 JPY (Japanese Yen)
This fee includes the book of abstracts.	
Student Participant	2,000 JPY
This fee includes the book of abstracts.	
Fee of Symposium Reception	2,000 JPY

Organizing Committee

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Secretary: R. Adachi

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- 16:10 - 16:30 H. Arii, A. Wada, Y. Funahashi, T. Ozawa, K. Jitsukawa, and H. Masuda (Nagoya Institute of Technology, Japan)
 BINDING AND ACTIVATION OF DIOXYGEN SPECIES BY ARTIFICIAL NON-HEME METAL COMPLEXES AND ITS REGULATION BY INTRAMOLECULAR NON-COVALENT INTERACTIONS
- 16:30 - 16:50 K. Shimizu*, M. Tomita* and K. Yoshizato*,** (*Cooperative Link of Unique Science and Technology for Economy Revitalization (CLUSTER),**Hiroshima University, Japan)
 TRANSGENIC SILKWORMS SPINNING RECOMBINANT HUMAN COLLAGEN INTO COCOONS: MASS PRODUCTION OF BIOMATERIALS IN AN ALTERNATIVE HOST
- 16:50 - 17:10 Y. Awakura, M. Miyake, K. Murase and T. Hirato (Kyoto University, Japan)
 ELECTRICAL PROPERTIES OF CdTe THIN FILM ELECTRODEPOSITED FROM AQUEOUS BASIC AMMONIACAL SOLUTIONS
- 17:10 - 17:30 H. Minoura and T. Yoshida (Gifu University, Japan)
 FLEXIBLE AND COLORFUL DYE-SENSITIZED SOLAR CELLS PREPARED BY BIOMIMETIC ELECTRODEPOSITION

POSTER PRESENTATION and WELCOME PARTY

(17:35 - 19:15) Meeting Room No.1, Toyota Auditorium

Poster Presentation PA-01 ~ PA-25

- PA-01 A. Ahniyaz, T. Fujino and M. Yoshimura (Tokyo Institute of Technology, Japan)
 DIRECT FABRICATION OF HYDROUS CeO₂-ZrO₂ SOLID SOLUTION BY MILLING ASSISTED SOLUTION PROCESSING
- PA-02 R. Dinesh, T. Fujiwara and M. Yoshimura (Tokyo Institute of Technology, Japan)
 DEPOSITION OF BaWO₄ FILM ON TUNGSTEN PLATE BY MECHANICALLY ACTIVATED INTERFACIAL REACTION AT ROOM TEMPERATURE
- PA-03 Xi-Ming Song*, M. Hashizume and J. Kikuchi (*Liaoning University, China, Nara Institute of Science and Technology (NAIST), Japan)
 INCORPORATION OF METAL TETRAKIS(ALKYLOXYCARBONYL) PHTHALOCYANINES INTO SYNTHETIC LIPID MEMBRANE AND THEIR CATALYTIC FUNCTIONS
- PA-04 M. Mabuchi, K. Katagiri, M. Hashizume, A. Ikeda and J. Kikuchi (Nara institute of Science and Technology (NAIST), Japan)
 PREPARATION OF ORGANIC-INORGANIC HYBRID NANO-CAPSULE "CERASOME" FORMED WITH A PHOSPHOLIPID DERIVATIVE
- PA-05 D. Nagahara, K. Takeuchi, X. Chen, S. Yang and S. Motojima (Gifu University, Japan)
 PREPARATION OF CARBON NANOCOILS USING CERAMIC POWDER-SUPPORTED METAL CATALYSTS
- PA-06 H. Aoki, C. Kuzuya, S. Hirako, S. Motojima and M. Fujii (Gifu University, Japan)
 SYNTHESIS OF CARBON NANOCOILS BY AU-NI CATALYSTS
- PA-07 T. Muraki and S. Motojima (Gifu University, Japan)
 SYNTHESIS OF CARBON NANOCOILS BY USING VARIOUS METAL ULFIDE CATALYSTS
- PA-08 Y. Kojima*, T. Kinoshita* and T. Yonezawa** (*Nagoya Institute of Technology, **Nagoya University, Japan)
 SELF-ORGANIZED NANO-PARTICLES COMPOSED OF PEPTIDE-BASED AMPHIPHILES AND THEIR OPTICAL RESOLUTION PROPERTIES
- PA-09 S. Ingebrandt*, H. Ecken*, G. Wrobel*, A. Baumann*, R. Seifert*, U. B. Kaupp*, M. Hara** and A. Offenhäusser* (*Research Center Jülich, Germany, **Frontier Research System RIKEN, Japan)
 COUPLING ELECTRICALLY ACTIVE CELLS TO EXTRACELLULAR SENSORS
- PA-10 T. Okano and M. Hiraishi (Nagoya University, Japan)
 MOLECULAR DESIGN FOR THE SELF-ASSEMBLY TOWARD THE ORGANIC

FERROELECTRIC MATERIALS

- PA-11* N. Shirahata, Won-Seon Seo*, Y. Masuda, T. Yonezawa, and K. Koumoto (Nagoya University, Japan, *Advanced Materials Analysis & Evaluation Center, Korea)
ALKYLTRICHLOROSILANE-BASED SELF-ASSEMBLED MONOLAYER ON HYDROGEN-TERMINATED SI SURFACE
- PA-12* M. Iijima, H. Kamemizu, N. Wakamatu, M. Adachi, T. Goto and Y. Doi, (Asahi University, Japan)
IN VITRO STUDY OF THE ORIENTED GROWTH OF OCTACALCIUM PHOSPHATE ON TYPE I COLLAGEN
- PA-13* Y. Fukuoka* and Y. Doi** (*DCF Implant Research Center, **Asahi University, Japan)
HUMAN IMMUNOHISTOCHEMICAL EVALUATION OF REGENERATION BY BIOMATERIAL BONE SUBSTITUTE COMBINED WITH β -TCP, PRP AND UTOGENOUS BONE : CASE REPORTS
- PA-14* R. Ichino, M. Shimizu, K. Kuroda and M. Okido (Nagoya University, Japan)
EFFECT OF SOLVENT ON ZnTe ELECTRODEPOSITION
- PA-15* S. J. Kim, Y. Mizutani, R. Ichino and M. Okido (Nagoya University, Japan)
IMPROVEMENT OF FILM PROPERTY BY SEALING AFTER ENVIRONMENTAL CONSCIOUS ANODIZING OF Mg-Al ALLOYS
- PA-16* A. Hozumi, Y. Yokogawa, T. Kameyama, H. Sugimura* and O. Takai* (National Institute of Advanced Industrial Science and Technology, *Nagoya University, Japan)
SPATIALLY REGULATED IMMOBILIZATION OF GOLD NANOPARTICLES ON MIXED SELF-ASSEMBLED MONOLAYERS
- PA-17* N. Saito, H. Nakahigashi, H. Sugimura, O. Takai (Nagoya University, Japan)
CHARACTERIZATION OF π -CONJUGATED SELF-ASSEMBLED MONOLAYERS DIRECTLY LINKING TO SILICON
- PA-18* Y. Y. Wu, M. Kouno, H. Sugimura, Y. Inoue and O. Takai (Nagoya University, Japan)
STUDY ON RELATION BETWEEN WETTABILITY AND SURFACE STRUCTURE
- PA-19* Y. Inoue, J. Iwai, Y. Y. Wu, and O. Takai (Nagoya University, Japan)
IN-SITU PLASMA DIAGNOSTICS IN PECVD PROCESSES OF ULTRA WATER-REPELLENT FILMS
- PA-20* K. Hayashi, N. Saito, H. Sugimura, O. Takai (Nagoya University, Japan)
TIP-INDUCED CHEMICAL CONVERSION OF TERMINAL GROUP ON ALKYL SILANE SELF-ASSEMBLED MONOLAYER IN SCANNING PROBE MICROSCOPY
- PA-21* I. Ikeda, H. Sugimura, and O. Takai (Nagoya University, Japan)
FABRICATION OF ORGANIC MICROSTRUCTURES BY COMBINING MOLECULAR SELF-ASSEMBLY AND ENERGETIC BEAM LITHOGRAPHY
- PA-22* R. Ohta, K. H. Lee, N. Saito, Y. Inoue, H. Sugimura and O. Takai (Nagoya University, Japan)
CHEMICAL STRUCTURAL ANALYSIS OF AMORPHOUS CARBON NITRIDES PREPARED BY SHIELDED ARC ION PLATING
- PA-23* C. S. Liu***, Qifeng Zhang**, Y. Y. Wu*, J. Wu** and O. Takai* (*Nagoya University, Japan, **Peking University, China)
MICROSTRUCTURAL EVOLUTION OF ZnO NANOROD-ARRAY FILMS
- PA-24* A. Yamaguchi, T. Fujihara, Y. Inoue and O. Takai (Nagoya University, Japan)
ENHANCEMENT OF ELECTROCHROMIC PROPERTY OF INDIUM NITRIDE FILMS BY INTRODUCING BIOMIMETIC MICROSTRUCTURE
- PA-25* S. Imura, H. Sugimura and O. Takai (Nagoya University, Japan)
SURFACE MODIFIED SI MOLDS FOR NANOIMPRINT LITHOGRAPHY
- PA-26 T. Koga, M. Morita, H. Otsuka and A. Takahara (Kyushu University, Japan)
SITE-SPECIFIC IMMOBILIZATION OF CHARGED MICROPARTICLES ON MICROPATTERNED ORGANOSILANE MONOLAYER

*Researches related to the Research Project on "Biomimetic Materials Processing" (JSPS-RFTF 99R13101).

Tuesday, January 28

REGISTRATION (09:00 - 19:00) Registration Desk

ORAL PRESENTATION (09:00- 10:20) Symposium Hall

- 09:00 - 09:40 M. Sarikaya (University of Washington, USA)
MOLECULAR BIOMIMETICS:PROTEIN-ASSISTED ASSEMBLY OF FUNCTIONAL MATERIALS FOR NANO- AND BIO-TECHNOLOGY
- 09:40 - 10:20 M. Yoshimura, T. Fujiwara and R. Teranishi (Tokyo Institute of Technology, Japan)
DIRECT PATTERNING OF CRYSTALLINE CERAMICS FILMS THROUGH LOCALLY ACTIVATED INTERFACIAL RECTIONS IN SOLUTION

Break (10:20 - 10:30)

ORAL PRESENTATION (10:30- 11:50) Symposium Hall

- 10:30 - 11:10 A. Offenhaeusser (Research Center Juelich, Germany)
BIOTRONICS - COUPLING OF EVOLUTIONARY OPTIMIZED BIOLOGICAL INFORMATION SYSTEMS WITH MICROELECTRONIC DEVICES
- 11:10 - 11:50 T. Kawai (Osaka University, Japan)

Lunch (11:50 - 13:00)

ORAL PRESENTATION (13:00 - 15:00) Symposium Hall

- 13:00 - 13:40 A. P. Tomsia (Lawrence Berkeley National Laboratory, USA)
BIOMIMETIC BONE-LIKE COMPOSITES AND NOVEL BIOACTIVE GLASS COATINGS
- 13:40 - 14:00 *I. Honma, H. Furukawa, H. Kawaoka, H. Zhou and M. Hibino (AIST, Japan)
NANO-STRUCTURED OXIDES GEL AND GIANT SURFACE PSEUDO- CAPACITANCE FOR HIGH RATE ELECTRODES
- 14:00 - 14:20 I. Moriguchi***, H. Yamada* and T. Kudo* (*Nagasaki University, **PRESTO, JST, Japan)
COLLOID CHEMICAL SYNTHESIS OF POROUS METAL OXIDES
- 14:20 - 14:40 C. Numako (University of Tokushima, Japan)
CHARACTERIZATION OF MAGNETITE AND RELATED IRON COMPOUNDS IN THE TEETH OF CHITON BY SYNCHROTRON RADIATION
- 14:40 - 15:00 A. Sugawara, T. Ishii and T. Kato (The University of Tokyo, Japan)
PERIODICALLY PATTERNED CALCIUM CARBONATE THIN FILM CRYSTALS FORMED THROUGH SELF-ORGANIZATION PROCESSES

Break (15:00 - 15:10)

ORAL PRESENTATION (15:10 - 17:10) Symposium Hall

- 15:10 - 15:50 U. G. K. Wegst (Max-Planck-Institut für Metallforschung, Germany)
STRUCTURAL CHARACTERISATION OF BIOLOGICAL MATERIALS BY FOCUSED ION BEAM METHODS AND X-RAY MICROTOMOGRAPHY

- 15:50 - 16:10 H. Imai, A. Kotach, Y. Oaki, S. Yamabi, T. Terada, S. Tatara, T. Fukuyo, S. Iwai and K. Furuichi (Keio University, Japan)
BIOMIMETIC ARCHITECTURES THROUGH STRANGE CRYSTAL GROWTH
- 16:10 - 16:30 T. Imae, C. Li, K. Mitamura and C. Hirano (Nagoya University, Japan)
MIMICRY OF PHOTOCYNTHESES - ORGANIZATION OF PROTOPORPHYRIN
- 16:30 - 16:50 H. Hasegawa, K. Takahashi, K. Yamauchi, T. Hashimoto, V. Bellas*, H. Iatrou*, N. Ekizoglou* and N. Hadjichristidis* (Kyoto University, Japan, *University of Athens, Greece)
SELF-ASSEMBLED STRUCTURES IN MULTI-COMPONENT MULTI-BLOCK COPOLYMERS
- 16:50 - 17:10* M. Kuzuya (Gifu Pharmaceutical University, Japan)
BIO-INSPIRED PREPARATION OF PATIENT-TAILORED DDS BY PLASMA TECHNIQUES

POSTER PRESENTATION (17:15 - 18:15) Meeting Room No.1, Toyota Auditorium

RECEPTION (18:20 - 20:00) Universal Club, Symposion

Poster Session PB-01 ~ PB-25

- PB-01 Z. Xiao, M. Xu, K. Sagisaka and D. Fujita (National Institute for Materials Science, Japan)
ADSORPTION BEHAVIOR OF LAMBDA DNA MOLECULES ON SOLID SURFACE
- PB-02 N. Kikuchi and S. Motojima (Gifu University, Japan)
SYNTHESIS OF CARBON NANOCOILS BY USING METAL CARBIDE CATALYSTS
- PB-03 S. Yang, X. Chen and S. Motojima (Gifu University, Japan)
MORPHOLOGY OF ZIGZAG CARBON NANOFIBERS PREPARED BY CATALYTIC PYROLYSIS OF ACETYLENE USING FE GROUP CONTAINING ALLOY CATALYSTS
- PB-04 M. Ichianagi, K. Takeuchi, S. Yang, X. Chen and S. Motojima (Gifu University, Japan)
AN APPROACH OF MASS SYNTHESIS OF CARBON NANOCOILS
- PB-05 Y. Oaki and H. Imai (Keio University, Japan)
MORPHOLOGICAL COMPLEXITY OF CRYSTAL GROWTH IN GEL MATRIX
- PB-06 S. Yamabi, S. Iwai and H. Imai (Keio University, Japan)
MORPHOLOGICAL EVOLUTION OF WURTZITE ZINC OXIDE FILMS GROWN IN AQUEOUS SOLUTIONS
- PB-07 A. Kotachi, T. Miura and H. Imai (Keio University, Japan)
EFFECTS OF COEXISTENT ELECTROLYTES AND SURFACES OF SUBSTRATES ON FILM GROWTH OF ALKALINE EARTH METAL CARBONATES
- PB-08 C. Li, K. Mitamura and T. Imae (Nagoya University, Japan)
PROTOPORPHYRIN IX ZINC (II) ORGANIZATION AT THE WATER/SOLID AND AIR/WATER INTERFACES
- PB-09 A. Mitra and T. Imae (Nagoya University, Japan)
COMPLEXATION BETWEEN DNA AND POLY(AMIDOAMINE) DENDRIMER STUDIED BY STATIC LIGHT SCATTERING AND ATOMIC FORCE MICROSCOPY
- PB-10 S. Juodkazis, R. Wakaki, N. Mukai, S. Matsuno and H. Misawa (The University of Tokushima, Japan)
VOLUME-PHASE TRANSITION OF POLY(N-ISOPROPYL-ACRYLAMIDE) GELS INDUCED BY LASER TWEEZERS
- PB-11 T. Kawai*, C. Ohtsuki*, M. Tanihara*, T. Miyazaki**, J. Nakao***, Y. Sakaguchi*** and S. Konagaya*** (*Nara Institute of Science and Technology, **Kyushu Institute of Technology, ***Toyobo Research Center Co., Ltd., Japan)
APATITE-FORMING ABILITY OF POLYAMIDE FILMS MODIFIED WITH SULFONIC GROUP IN A SOLUTION MIMICKING BODY FLUID
- PB-12 A. Takeuchi, C. Ohtsuki, T. Miyazaki*, S. Ogata, M. Tanihara, H. Tanaka**, Y. Furutani*** and H. Kinoshita*** (Nara Institute of Science and Technology (NAIST), *Kyushu Institute of Technology, **Kyoto Prefectural Institute for Northern Industry, ***CENTMED Inc., Japan)

- APATITE DEPOSITION ON SILK SERICIN IN A SOLUTION MIMICKING BODY FLUID
- PB-13* Y. Gao, Y. Masuda and K. Koumoto (Nagoya University, Japan)
DIRECT DEPOSITION OF MICROPATTERNED SrTiO₃ THIN FILM ON SELF-ASSEMBLED MONOLAYERS FROM AN AQUEOUS SOLUTION
- PB-14* P. Zhu, Y. Masuda and K. Koumoto (Nagoya University, Japan)
SELECTIVELY ELECTROSTATIC ADHESION AND GROWTH OF TINY PARTICLES ONTO THE CHARGED SELF-ASSEMBLED MONOLAYERS IN AQUEOUS SOLUTIONS -- A NOVEL APPROACH FOR MICROPATTERNING OF CERAMIC AND METAL FILMS --
- PB-15* K. Nishikawa, K. Kuroda, R. Ichino and M. Okido (Nagoya University, Japan)
ELECTROCHEMICAL HYDROXYAPATITE DEPOSITION ON TITANIUM ELECTRODE
- PB-16* N. Maeda, N. Saito, H. Sugimura and O. Takai (Nagoya University, Japan)
SI-OR MONOLAYER ON HYDROGEN-TERMINATED SILICON PREPARED FROM AN ALCOHOL
- PB-17* M. Iyoshi, Y. Y. Wu, H. Sugimura and O. Takai (Nagoya University, Japan)
ORGANIC MOLECULE ADSORPTION ON QCM WITH ULTRA WATER-REPELLENT COATING
- PB-18* M. Bekke, Y. Y. Wu, Y. Inoue, H. Sugimura and O. Taki (Nagoya University, Japan)
EFFECT OF DEPOSITION PRESSURE AND RATION OF RAW MATERIAL ON THE PROPERTY OF SUPER-HYDROPHOBIC FILMS
- PB-19* T. Kamikawa, N. Saito, Y. Inoue, H. Sugimura and O. Takai (Nagoya University, Japan)
CARBON NITRIDES FILM PREPARED BY VACUUM ULTRA VIOLET CHEMICAL VAPOR DEPOSITION (VUV-CVD)
- PB-20* N. Okazaki, Y. Inoue, H. Sugimura and O. Takai (Nagoya University, Japan)
EFFECT OF DC SUBSTRATE BIAS AND SUBSTRATE TEMPERATURE ON CARBON NITRIDE THIN FILMS PREPARED BY PECVD
- PB-21* K. H. Lee, R. Ohta, T. Kamikawa, H. Sugimura, Y. Inoue and O. Takai (Nagoya University, Japan)
NANO-WEAR RESISTANCE OF AMORPHOUS CARBON FILMS PREPARED BY SHIELDED ARC ION PLATING
- PB-22* Y. Ishida, K. Hayashi, H. Sugimura, O. Takai and N. Nakagiri* (Nagoya University, *National Institute of Advanced Industrial Science and Technology, Japan)
SCANNING PROBE MICROSCOPY FOR DOPANT PROFILES ON SILICON SUBSTRATES: EFFECTS OF ADSORBED WATER AND SELF-ASSEMBLED MONOLAYERS ON THE SUBSTRATES
- PB-23* K. Teshima***, H. Sugimura*, Y. Inoue* and O. Takai* (*Nagoya University, **Dai Nippon Printing Co.Ltd., Japan)
GAS PERMEATION OF SURFACE-MODIFIED SILICA FILMS WITH GRAFTED ORGANOSILANE MOLECULES
- PB-24* J. Matsui, D. Yamashina, Y. Inoue and O. Takai (Nagoya University, Japan)
CHEMICAL STABILITY OF TIN-NITRIDE THIN FILMS DEPOSITED BY REACTIVE MAGNETRON SPUTTERING
- PB-25* T. Furukawa, H. Sugimura and O. Takai (Nagoya University, Japan)
EFFECTS OF PROXIMITY GAP AND IRRADIATION TIME ON PHOTODEGRADATION OF ORGANOSILANE SELF-ASSEMBLED MONOLAYERS

*Researches related to the Research Project on "Biomimetic Materials Processing" (JSPS-RFTF 99R13101).

Wednesday, January 29

REGISTRATION (09:00 - 13:00) Registration Desk

ORAL PRESENTATION (09:00- 10:20) Symposion Hall

- 09:00 - 09:40 J. F. V. Vincent (University of Bath, UK)
BIOLOGICAL PROTOTYPING
- 09:40 - 10:00 Y. Matsuyama, M. Gotou, H. Yoshihara, T. Tsuji, Y. Sakai, H. Nakamura and N. Ishiguro (Nagoya University, Japan)
VERTEBROPLASTY WITH BIODEGRADABLE CALCIUM PHOSPHATE CEMENT IN THE TREATMENT OF OSTEOPOROTIC VERTEBRAL COMPRESSION FRACTURE USING INSTRUMENTATION
- 10:00 - 10:20 T. Taguchi*, H. Kobayashi*, K. Kubo**, H. Matsumoto***, K. Kataoka*, Y. Toyama*** and J. Tanaka (*Biomaterials Center, National Institute for Materials Science, **NOF Corporation, ***Keio University, Japan)
ENCAPSULATION OF CHONDROCYTES IN ALKALINE-TREATED COLLAGEN GELS PREPARED USING POLY(ETHYLENE GLYCOL)-BASED FOUR-ARMED STAR POLYMER

Break (10:20 - 10:30)

ORAL PRESENTATION (10:30- 11:50) Symposion Hall

- 10:30 - 10:50 R. Tominaga*, T. Kinoshita*, S. Hayashi**, Y. Yokogawa** and S. Washizu*** (*Nagoya Institute of Technology, **National Institute of Advanced Industrial Science and Technology, ***Fuji Photo Film co., LTD., JAPAN)
VISUAL SENSING OF HOST-GUEST REACTION USING POLYPEPTIDE LB FILMS
- 10:50 - 11:10 N. Murazawa, S. Juodkazis, I. Hasegawa, S. Matsuno and H. Misawa (The University of Tokushima, Japan)
OPTICAL CHARACTERIZATION OF LIQUID CRYSTAL DROPLETS USING LASER TWEEZERS
- 11:10 - 11:30 H. Jinnai*, K. Hamano*, I. Taniguchi*, T. Kato** and H. Hasegawa*** (*Kyoto Institute of Technology, **The University of Tokyo, ***Kyoto University, Japan)
DEVELOPMENT OF A BICONTINUOUS ORGANIC-INORGANIC HYBRID MATERIALS
- 11:30- 11:50 D. Fujita (National Institute for Materials Science, Japan)
DISCOVERY OF CARBON NANOWIRES FORMED ON CARBON-DOPED NI(111) BY SURFACE PRECIPITATION OF DOPANTS

Lunch (11:50 - 13:00)

ORAL PRESENTATION (13:00 - 15:00) Symposion Hall

- 13:00 - 13:40 C. Tamerler-Behar* and M. Sarikaya** (*Istanbul Technical Univ., Turkey, ** Univ. of Washington, USA)
PROTOCOLS FOR GENETICALLY ENGINEERED POLYPEPTIDES FOR INORGANICS
- 13:40 - 14:00 S. Ogura and M. Ohyabu (Kobe Design University, Japan)
STRUCTURAL COLOR IN NATURE AND ITS POSSIBLE APPLICATIONS FOR INDUSTRY

- 14:00 - 14:20 X. Chen, S. Yang, K. Takeuchi, T. Hashishin*, H. Iwanaga* and S. Motojima (Gifu University, *Nagasaki University, Japan)
PREPARATION AND MORPHOLOGY OF CARBON NANOCOILS BY CVD PROCESS BY USING VARIOUS CATALYSTS
- 14:20 - 15:00 B. Xing*, K. H. Chow**, C. W. Yu*, E. Tong**, P. L. Ho** and B. Xu* (*Hong Kong University of Science & Technology, **University of Hong Kong, Hong Kong)
POLYVALENT BINDING-A BIOMIMETIC APPROACH TO DETECT AND INHIBIT BACTERIA

Break (15:00 - 15:10)

ORAL PRESENTATION (15:10 - 17:10) Symposium Hall

- 15:10 - 15:30 A. Takahara, K. Yamamoto, R. Matsuno and H. Otsuka (Kyushu University, Japan)
AGGREGATION STRUCTURE AND PROPERTIES OF (NANOFILLER/POLYMER) NANOCOMPOSITES THROUGH DIRECT POLYMER GRAFTING
- 15:30 - 15:50 T. Wakihara and T. Okubo (The University of Tokyo, Japan)
CRYSTALLIZATION MECHANISMS OF ZEOLITES
- 15:50 - 16:10 K. Kamiya, T. Hashimoto, H. Akamatsu, Y. Umetani and H. Nasu (Mie University, Japan)
STRUCTURE STUDY OF AMORPHOUS AND CRYSTALLINE SILICA IN PLANT-BIOLOGICAL SYSTEM AN ACCESS TO BIOMIMETIC FABRICATION OF SILICA GLASS OR QUARTZ UNDER AMBIENT CONDITION
- 16:10 - 16:30 A. Shimojima*, Y. Fujimoto* and K. Kuroda*** (*Waseda University, **CREST, JST, Japan)
FORMATION OF LAYERED SILICA-ORGANIC NANOCOMPOSITES BY THE SELF-ASSEMBLY OF HYDROXYSILANES WITH LONG ALKYL CHAINS
- 16:30 - 16:50 N. Saito, H. Haneda and K. Koumoto* (National Institute for Materials Science, *Nagoya University, Japan)
PATTERN-DEPOSITION OF ZNO PARTICULATE FILM ON SITE-SELECTIVELY CATALYZED SELF-ASSEMBLED MONOLAYER TEMPLATE
- 16:50 - 17:10* Y. Masuda and K. Koumoto (Nagoya University, Japan)
BIO-INSPIRED PROCESSING FOR NANO/MICRO-PATTERNS OF THIN FILMS AND PARTICLES

CLOSING REMARKS (17:10 - 17:15) Symposium Hall

- 17:10 - 17:15* O. Takai (Nagoya University, Japan; Chairperson of BMMP-3)

*Researches related to the Research Project on "Biomimetic Materials Processing" (JSPS-RFTF 99R13101).