

Proceedings of the International Dental Materials Congress 2007

Dental Biomaterials and Technology
– Present and Future –

In Conjunction with 50th General session of
the Japanese Society for Dental Materials and Devices



The Imperial Queen's Park Hotel,
Bangkok, Thailand
November 21-24, 2007



Welcome from the President of IDMC 2007

It is a great pleasure for the Japanese Society for Dental Materials and Devices (JSDMA) to hold the International Dental Materials Congress 2007 (IDMC 2007) in Bangkok with the co-sponsorship of the Korea Research Society for Dental Materials, the Japanese Society of Conservative Dentistry, the Japan Prosthodontic Society, and the Thai Operative Dentistry Society. On behalf of the congress chairman, I sincerely welcome all participants to the Congress.

The success of this congress will, in great part, be due to the extraordinary efforts and the leadership of Dr. Hiroshi Nakajima and Dr. Hidekazu Takahashi. We are in debt to both of them and to all the members of the organizing committees for making this congress possible. Needless to say, the success of the Congress is also the result of the wonderful patronage given by the International Committee Members. With their support and efforts, we have been able to receive a large number of abstracts from all over the world.

Looking back on dental history, it is obvious that improvements of dental materials have contributed to the outstanding progress made in dental practice. JSDMD has already co-sponsored the International Congress on Dental Materials four times, in 1989, 1993, 1997, and 2001, with the Academy of Dental Materials to discuss the past, the present and the future of dental materials. We are proud to have contributed to the progress seen worldwide in the research and development of dental materials through our discussions at past international congresses.

Recent rapid progress in the fields of life sciences and engineering has influenced current dental practice. We have seen a paradigm-shift in the application of dental materials to conventional dental practice. Nevertheless, we still require more sophisticated dental materials to prevent and cure dental diseases, and to recover and maintain oral function and health. The purpose of this congress is to provide opportunities for researchers and clinicians to share and update their knowledge of dental materials, biomaterials and technology.

I believe our congress will certainly provide the chance for scientists and clinicians from all over the world to meet and exchange information. I sincerely hope you enjoy the Congress.

Takashi Miyazaki, DDS, PhD

President

Japanese Society for Dental Materials and Devices

Note from Program Chair (Proceedings Editors)

It is our great pleasure that these proceedings are published as a document of the International Dental Materials Congress 2007 (IDMC 2007).

Almost 270 papers including the invitations were accepted for the Congress after more than 14 reviewers gave their time. The Organizing Committee selected speakers for invited lectures and topics for general sessions that reflect the developing trends in dental materials.

We apologize that some papers were slightly modified according to the comments from reviewers due to unifying the format of the proceedings.

Finally, we would like to thank the members of the various societies and all other sponsoring and individuals who have contributed to the success of the International Dental Materials Congress 2007.

Hiroshi Nakajima
Chair, Organizing Committee

Hidekazu Takahashi
Vice-chair, Organizing Committee

Masayuki Okazaki
Program Committee Chair

Organizing Committee of International Dental Materials Congress 2007

Organization:

The Japanese Society for Dental Materials and Devices

Cosponsored organization:

The Korea Research Society for Dental Materials

The Japanese Society of Conservative Dentistry

Japan Prosthodontic Society

Thai Operative Dentistry Society

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Piriya Yawiraj	Chiang Mai University, Thailand.

Contributors



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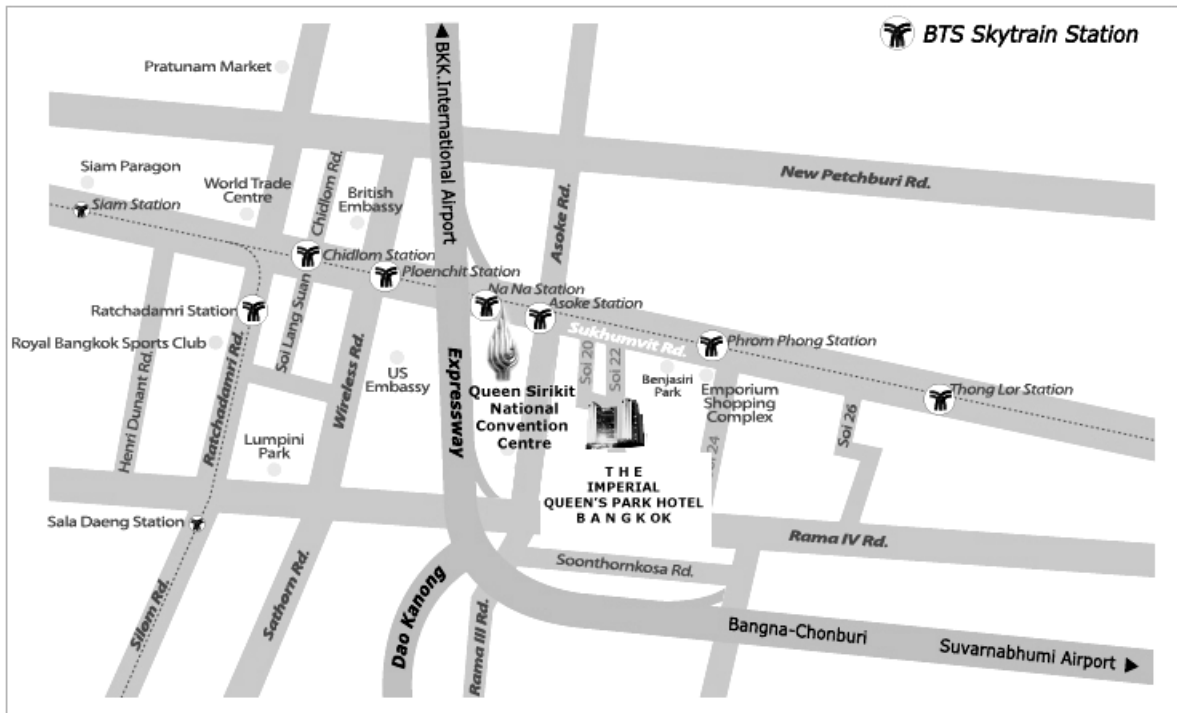
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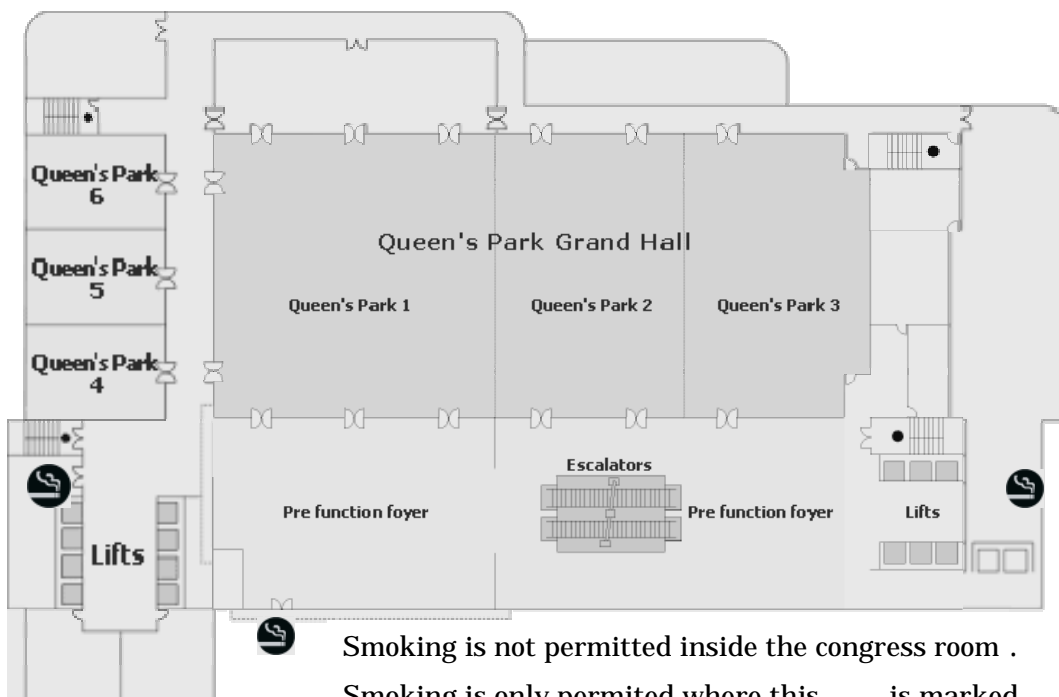
The Imperial Queen's Park is situated in Sukhumvit, a prime business and shopping area.

The Sky Train (BTS), the newest mode of convenient transport is but 3 minutes away by a leisurely walk through a park.

Floor Map of the Congress

2nd Floor Invited presentaion [QP 1], General seccion (Oral [QP 4-6], Poster [QP2]) ,
 Welcome reception[QP3]

Mezzanine Floor Slide preview (Benjasiri)



IDMC 2007 Meeting Schedule

Wednesday, November 21

- 4:00 pm – 8:00 pm Registration
6:00 pm – 8:00 pm Welcome Reception (Queen's Park 3)

Thursday, November 22

- 8:30 am – noon Registration
8:50 am Opening Remark
9:00 am – 10:10 am Invited Presentation I (Queen's Park 1)
9:00 am – 9:35 am “Next Generation Calcium Phosphate-based Biomaterials”
Coordinator: Masayuki Okazaki (Hiroshima University, Hiroshima, Japan)
Speaker: Laurence C. Chow (Paffenburger Research Center, Gaithersburg, USA)
9:35 am – 10:10 am “Bio-active Restorative Materials with Antibacterial Effects
–Innovative Materials in the New Era”
Coordinator: Takashi Matsuo (the University of Tokushima, Tokushima, Japan)
Speaker: Satoshi Imazato (Osaka University, Suita, Japan)
10:10 am – 10:40 am Coffee Break
10:40 am – 11:50 am Invited Presentation II (Queen's Park 1)
10:40 am – 11:15 am “Electrochemical Surface Modification of Titanium in Dentistry”
Coordinator: Takao Hanawa (Tokyo Medical and Dental University, Tokyo, Japan)
Speaker: Kyo-Han Kim (Kyungpook National University, Daegu, Korea)
11:15 am – 11:50 am “Esthetic Dentistry in the Land of Smile”
Coordinator: Takuji Ikemi (Nihon University School of Dentistry at Matsudo, Matsudo, Japan)
Speaker: Chalernpol Leevailoj (Chulalongkorn University, Bangkok, Thailand)
Noon – 1:00 pm Lunch (9th Floor)

Friday, November 23

- 8:30 am – 0:30 pm Registration
9:00 am – 10:10 am Invited Presentation III (Queen's Park 1)
9:00 am – 9:35 am “Smart Materials in Dentistry - Future Prospects”
Coordinator: Yasuko Momoi (Tsurumi University, Yokohama, Japan)
Speaker: John F. McCabe (the University of Newcastle upon Tyne, Newcastle upon Tyne, United Kingdom)
9:35 am – 10:10 am “Metal-free Alternatives to Crowns and Fixed Partial Dentures”
Coordinator: Yoshihiro Terada (Kyushu University, Fukuoka, Japan)
Speaker: Hiroyuki Miura (Tokyo Medical and Dental University, Tokyo, Japan)

- 9:00 am – 10:10 am Poster Presentation Competition (PS1 – PS7) (Queen’s Park 2)
- 10:10 am – 11:10 am Poster Presentation I (PS1 – PS7, P1 – P109) (Queen’s Park 2)
and Coffee Break
- 11:10 am – 0:20 pm Invited Presentation IV (Queen’s Park 1)
- 11:10 am – 11:45 am “Dental CAD/CAM: Current Status and Future Perspective”
Coordinator: Hideo Ogura (the Nippon Dental University School of Life Dentistry at Niigata, Niigata, Japan)
Speaker: Takashi Miyazaki (Showa University, Tokyo, Japan)
- 11:45 am – 0:20 am “International Standards for Dental Products: Why Do We Need Them?”
Coordinator: Yutaka Oda (Tokyo Dental College, Chiba, Japan)
Speaker: Martin J. Tyas (The University of Melbourne, Melbourne, Australia)
- 0:30 pm – 1:30 pm Lunch (9th Floor)
- 6:00 pm – Banquet (optional) (time on board 8:00 pm – 10:00 pm)

Saturday November 24

- 8:30 am – 0:30 pm Registration
- 9:00 am – 10:15 am Oral Presentation AI (O1 – O5) (Queen’s Park 4)
Oral Presentation BI (O11 – O15) (Queen’s Park 5)
Oral Presentation CI (O21 – O25) (Queen’s Park 6)
- 10:15 am – 11:15 am Poster Presentation II (P110 – P222) (Queen’s Park 2)
and Coffee Break
- 11:15 am – 0:30 pm Oral Presentation AII (O6 – O10) (Queen’s Park 4)
Oral Presentation BII (O16 – O20) (Queen’s Park 5)
Oral Presentation CII (O26 – O30) (Queen’s Park 6)
- 0:30 pm Closing Remark
- 0:40 pm – 1:40 pm Lunch (9th Floor)

General Session Program

Oral Presentation AI (O1 – O5) (Queen's Park 4): Saturday, 9:00 am – 10:15 am

Chair: Finger WJ (University of Cologne, Germany), Nishiyama N (Nihon University School of Dentistry at Matsudo, Japan)

- O1 Effects of Hydrophilicity and Sulcus Width on Sulcus Depth Reproduction
*Takahashi H¹⁾, Kurokawa R²⁾, Finger WJ³⁾
(¹Tokyo Medical and Dental University, Tokyo, Japan, ²Niigata University, Niigata, Japan, ³University of Cologne, Cologne, Germany)
- O2 Influence of Resin Composites on Self-etch Adhesives Efficacy
*Finger WJ¹⁾, Kurokawa R²⁾, Hoffmann M³⁾, Endo T⁴⁾, Kanehira M⁴⁾, Komatsu M⁴⁾
(¹University of Cologne, Cologne, Germany, ²Niigata University, Niigata, Japan, ³Heraeus Kulzer, Wehrheim, Germany, ⁴Tohoku University, Sendai, Japan)
- O3 The Controlled Drug Release from the Dental Absorbent Point Coated with Polymer
*Je J¹⁾, Lee DY²⁾, Kim KN¹⁾, Lee YK¹⁾, Kim KM¹⁾
(¹Yonsei University, Seoul, Korea, ²YESBIO Co., Ltd, Goyang, Korea)
- O4 Physical and Bonding Properties of Surface-coating Resins Incorporating Antibacterial Monomer MDPB
*Kaneshiro AV, Imazato S, Eneren E, Iwami Y, Ebisu S
(Osaka University, Suita, Japan)
- O5 Bonding of Acid-etch and Self-etch Adhesives to Human Fluorosed Dentin
*Waidyasekera PGK, Nikaido T, Weerasinghe DDS, Tagami J
(Tokyo Medical and Dental University, Tokyo, Japan.)

Oral Presentation AII (O6 – O10) (Queen's Park 4): Saturday, 11:15 am – 0:30 pm

Chair: Kim KM (Yonsei University, Korea), Tamaki Y (Showa University, Japan)

- O6 Bonding Performance of Two Experimental Self-etching Adhesives to Tooth Substrate
*Wei SH, Shimada Y, Tagami J
(Tokyo Medical and Dental University, Tokyo, Japan)
- O7 Cervical Margin Microleakage of Class II Composite Resin Inlay Restorations
*Handajani J^{1,3)}, Arianto YKE²⁾, Kota K¹⁾, Hoshino E¹⁾
(¹Niigata University, Niigata, Japan, ²Indonesia University, Jakarta, Indonesia, ³Gadjah Mada University, Yogyakarta, Indonesia)

- O8 Influences of Dextrin in Calcium Phosphate Composite Cement for Bone Substitute
*Oh YI¹, Lee DY², Kim KM¹, *Kim KN¹*
(¹Yonsei University College of Dentistry, Seoul, Korea, ²YESBIO Co., Ltd, Goyang, Korea)
- O10 Microtensile Bond Strength of Different Types of Glass Ionomer Cements to Er,Cr:YSGG Laser Prepared Dentin
**Ekworapoj P, Sidhu SK, McCabe JF*
(the University of Newcastle upon Tyne, Newcastle upon Tyne, United Kingdom)

Oral Presentation BI (O11 - O15) (Queen's Park 5): Saturday, 9:00 am – 10:15 am

Chair: Kawai T (Aichi-Gakuin University, Japan), Shiraishi T (Nagasaki University, Japan)

- O11 Mechanism of Delayed Fracture of Titanium Implant *in vivo*
Asaoka K
(the University of Tokushima, Tokushima, Japan)
- O13 Color Analysis of Oxidized Pd-free Au-Pt-based High Noble Dental Alloys for Porcelain Veneering
**Shiraishi T¹, Johnson A², Shinozaki N³, Hisatsune K¹*
(¹Nagasaki University, Nagasaki, Japan, ²University of Sheffield, Sheffield, United Kingdom, ³ Kyushu Institute of Technology, Kitakyushu, Japan)
- O14 Osteoinductive Activity of BMP-resin Composite Material
**Kawai T, Okeya H, Hamajima S, Sato Y, Taniyama M, Suzuki T, Kawai H, Yamamoto I*
(Aichi-Gakuin University, Nagoya, Japan)
- O15 Electrochemical Behaviors of Titanium in the Basic Saline Solution Containing Hydrogen Peroxide
**Takemoto S, Hattori M, Yoshinari M, Kawada E, Oda Y*
(Tokyo Dental College, Chiba, Japan)

Oral Presentation BII (O16 - O20) (Queen's Park 5): Saturday, 11:15 am – 0:30 pm

Chair: Ban S (Kagoshima University, Japan), Yoshinari M (Tokyo Dental College, Japan)

- O16 Influence of pH on Discoloration of Titanium-based Alloys in Solutions Containing Hydrogen Peroxide
**Oda Y, Takemoto S, Hattori M, Yoshinari M, Kawada E*
(Tokyo Dental College, Chiba, Japan)
- O17 Bond Strength of Binary Ti-Cr Alloys to Porcelain
**Hsu HC¹, Chiang TY², Wu SC¹, Lin HC¹, Ho WF²*
(¹Central Taiwan University of Science and Technology, Taichung, Taiwan, ²Dayeh University, Changhua, Taiwan)

O18 Biaxial and Three-point Flexure Strength of Core Dental Ceramics

*Sato H, Ban S, Yamashita D

(Kagoshima University, Kagoshima, Japan)

O19 The Constitution of Porcelain Used in Porcelain Fused to Metal System

*Saghiri MA¹⁾, Saghiri AM²⁾, Aminsobhani M³⁾, Lotfi M⁴⁾, Bahramian N⁵⁾

(¹Young Researchers Club, Tehran, Iran, ²Material Simulation Center, Tehran, Iran, ³Tehran University of Medicine, Tehran, Iran, ⁴Tabriz University of Medicine, Tabriz, Iran, ⁵Azad University, Tehran, Iran)

O20 Characterization of Hydroxyapatite Containing Aspartic Acid

*Uddin MH, Matsumoto T, Sohmura T

(Osaka University, Suita, Japan)

Oral Presentation CI (O21 – O25) (Queen's Park 6): Saturday, 9:00 am – 10:15 am

Chair: Yoshida Y (Okayama University, Japan), Ishikawa K (Kyushu University, Japan)

O21 Bone Formation with Reinforced CO₃Ap-collagen Scaffolds

Tieliewuhan Y, Hirata I, *Okazaki M

(Hiroshima University, Hiroshima, Japan)

O22 Effects of Short-period Exposure to Antibacterial Monomer MDPB on Viability of *Streptococcus mutans*

*Izutani N¹⁾, Imazato S¹⁾, Takahashi Y¹⁾, Ebisu S¹⁾, Russel RRB²⁾

(¹Osaka University, Suita, Japan, ²the University of Newcastle upon Tyne, Newcastle upon Tyne, United Kingdom)

O23 The Influence of the Ca²⁺ on Bone-like Tissue Induction *in vitro*

*Hayashi T, Kawai T, Kuroki K, Asai T, Okano M, Sato Y, Taniyama M

(Aichi-Gakuin University, Nagoya, Japan)

O24 Modification of Ti Surface with Phosphorylated Pullulan and Photoreactive Gelatin

*Yoshida Y¹⁾, Tanaka T¹⁾, Kuboki T¹⁾, Suzuki K¹⁾, Ito Y²⁾

(¹Okayama University, Okayama, Japan, ²Riken, Wako, Japan)

O25 Biological Response of Octacalcium Phosphate Combined with Collagen Implanted in Subperiosteal Region

*Suzuki Y¹⁾, Kamakura S¹⁾, Hatori K¹⁾, Sasaki K²⁾, Honda Y¹⁾, Anada T¹⁾, Sasaki K¹⁾, Suzuki O¹⁾

(¹Tohoku University, Sendai, Japan, ²Nippon Meat Packers, inc., Tsukuba, Japan)

Oral Presentation CII (O26 - O30) (Queen's Park 6): Saturday 11:15 am – 0:30 pm

Chair: Fukui T (Aichi-Gakuin University, Japan), Burrow M (the University of Melbourn, Australia)

O26 Bone Regenerative Potential of Mesenchymal Stem Cell on Micro-structured Titanium Processed by Wire-type Electric Discharge Machining in an Osteogenic Media

**Kataoka Y, Oze M, Shibata Y, Miyazaki T*

(Showa University, Tokyo, Japan)

O27 Formation of Hemidesmosome Associated with the Use of Different Materials in Dental Implants

Djustiana N

(Padjadjaran University, Bandung, Indonesia)

O28 Examining the Changes in Mouse Osteoblastic Cells on Sintered TiO₂ Surface

Takei Y

(Aichi-Gakuin University, Nagoya, Japan,)

O29 A Clinical Trial Comparing Two All-in-one Adhesive Systems Used to Restore Non-carious Cervical Lesions – Results at 1 Year

**Burrow MF, Tyas MJ*

(the University of Melbourne, Melbourne, Australia)

O30 Cytotoxic Evaluation of Feldspathic Porcelain with Different Surface Treatment Procedures and Accelerated Aging

**Atay A¹⁾, Yumushan G¹⁾, Karayazgan B²⁾, Oruc S¹⁾*

(¹GATA Haydarpaşa Training Hospital Dental Service, Istanbul, Turkey, ²Istanbul University, Istanbul, Turkey)

Poster Presentation Competition (PS1 – PS7) (Queen’s Park 2): Friday, 9:00 am – 10:10 am

- PS1 The Color of the Composite Resin for ESTELITE PRO
*Murai H, Katayama T
(Meikai University, Sakado, Japan)
- PS2 *In vitro* Biocompatibility with Osteoblast-like Cell on Zirconia
*Yamashita D¹⁾, Kanbara K¹⁾, Machigashira M¹⁾, Miyamoto M¹⁾, Izumi Y²⁾, Ban S¹⁾
(¹Kagoshima University, Kagoshima, Japan, ²Tokyo Medical and Dental University, Tokyo, Japan)
- PS3 Release of β -Lactoglobulin Adsorbed on Octacalcium Phosphate and Its Hydrolyzates
*Kumagai T, Anada T, Shimauchi H, Suzuki O
(Tohoku University, Sendai, Japan)
- PS4 Effects of Pd and Pt on Corrosion Behavior of Zr in Simulated Body Fluid
*Tsutsumi Y¹⁾, Takano Y²⁾, Doi H¹⁾, Noda K²⁾, Hanawa T¹⁾
(¹Tokyo Medical and Dental University, Tokyo, Japan, ²Shibaura Institute of Technology, Tokyo, Japan)
- PS5 MMA Increases *GSTa1* Promoter Activity
*Hattori N, Suzuki T, Jinno S, Kanamori T, Kawai T, Noguchi T
(Aichi-Gakuin University, Nagoya, Japan)
- PS6 Mechanical Properties of Resin Composite Endodontic Posts Using Prefabricated Fiber Posts
*Kono T, Takemoto S, Hattori M, Yoshinari M, Kawada E, Oda Y
(Tokyo Dental College, Chiba, Japan)
- PS7 Calculation of Residual Stress and Permanent Deformation in Wrought-wire Gold and Co-Cr Alloy Clasps
*Oda N, Wakabayashi N, Suzuki T
(Iwate Medical University, Morioka, Japan)

Poster Presentation (P1 – P109) (Queen's Park 2): Friday, 10:10am – 11:10am

Polymer: Adhesive

- P1 Effect of Prior Acid Etching on Bonding Durability of Single-step Adhesives
**Tsubota K, Watanabe T, Mori K, Yamamoto A, Asaka Y, Kurokawa H, Ando S, Miyazaki M*
(*Nihon University, Tokyo, Japan*)
- P2 Influence of Acidic Erosion on Dentin Bond Strength of Single-step Self-etch System
**Rikuta A, Chiba Y, Irokawa A, Yasuda G, Yamaguchi K, Watanabe T, Takamizawa T, Miyazaki M*
(*Nihon University, Tokyo, Japan*)
- P3 Dentine Permeability after Conditioning and Its Effect on Micro-shear Bond Strength
**Banomyong D^{1,2}, Palamara JEA¹, Burrow MF¹, Messer HH¹*
(*¹the University of Melbourne, Melbourne, Australia, ²Mahidol University, Bangkok, Thailand*)
- P4 Effect of Thermocycling on Micro-tensile Bond Strength of Tooth Make-up System to Enamel and Dentin
**Chen KK, Terashita M*
(*Kyushu Dental College, Kitakyushu, Japan*)
- P5 Resin Penetration and Degree of Cure of Adhesives in Artificial Carious Lesions
**Rolland S, McCabe J, Walls A, German M*
(*the University of Newcastle upon Tyne, Newcastle upon Tyne, United Kingdom*)
- P6 Effect of Physical Strength of Luting Cements on Zirconia Fixation
**Yarimizu H, Tokui H, Nakaseko H, Sakuma T*
(*GC Corporation, Tokyo, Japan*)
- P7 Bonding Strength and Cavity Adaptation with Experimental UDMA/4-META Adhesives
**Shigetani Y¹, Finger WJ², Hoffmann M³, Okiji T¹*
(*¹Niigata University, Niigata, Japan, ²University of Cologne, Cologne, Germany, ³Heraeus Kulzer, R&D, Wehrheim, Germany*)
- P8 Effects of Incorporating into Chlorhexidine Self-etching Primers
**Nishitani Y¹, Donnelly A², Yoshiyama M¹, Tay F², Pashley D²*
(*¹Okayama University, Okayama, Japan, ²Medical College of Georgia, Augusta, USA*)
- P9 Interface Analysis of an Adhesive Sealer and Root Canal Dentin
**Yoshikawa M¹, Otsuki H¹, Yamamoto T¹, Kawashima T², Wakamatsu S², Matsushima K², Ikemi T³*
(*¹Sun Medical Co., Ltd., Shiga, Japan, ²Nihon University School of Dentistry at Matsudo, Matsudo, Japan*)

- P10 Wear Resistance of a Resin Coating Material against Toothbrush Abrasion
*Yamamoto T¹⁾, Otsuki H¹⁾, Nishimoto C¹⁾, Nikaido T²⁾, Tagami J²⁾
(¹Sun Medical Co., Ltd., Moriyama, Japan, ²Tokyo Medical and Dental University, Tokyo, Japan)
- P11 Bond Strength of One Step Resin Bonding System to Composite Resin
*Terata R, Okada N, Kubota M
(Iwate Medical University, Morioka, Japan)
- P12 Bond Strength of Resin Cement and Resin Reinforced Glass Ionomer Cement to Tooth Substrate
*Okada N, Terata R, Kubota M
(Iwate Medical University, Morioka, Japan)
- P13 Study on Dentin Bonding Durability of a Total-etch Adhesive System
*Yamamoto K, Hirata N, Kamono T, Onda K, Fukui M, Fujiwara H, Murata A, Shiraishi M
(Osaka Dental University, Hirakata, Japan)
- P14 Durability against Water of Fluorinated Resin Bond to Precious Metal Alloys Treated with Various Thiirane Monomers
Kadoma Y
(Tokyo Medical and Dental University, Tokyo, Japan)
- P15 Physical Properties of Newly Developed Root Canal Filling Materials Containig Ethyl Methacrylate Resin
*Wanibe H, Yamamoto M, Nakamura A, Watanabe T, Kitamura N, Nakata K, Kawai T, Nakamura H
(Aichi-Gakuin University, Nagoya, Japan)
- P16 Marginal Adaptation of Simplified Dentin Bonding Systems
*Hatsuoka Y, Tanimoto H, Nishida H, Takeuchi O, Kawamura M, Kawamoto M, Inoue M, Yamamoto K
(Osaka Dental University, Hirakata, Japan)
- P17 Effect of Surface Treatments on Shear Bond Strength of Indirect Resin Composite –Application of Hydrofluoric Acid Treatment–
*Hori S¹⁾, Minami H¹⁾, Murahara S¹⁾, Minesaki Y¹⁾, Onizuka T¹⁾, Matsumura H²⁾, Tanaka T¹⁾
(¹Kagoshima University, Kagoshima, Japan, ²Nihon University, Tokyo, Japan)
- P18 Micro-tensile Bond Strength of Two All-in-one and One Two-step Self-etch Adhesives to Enamel and Dentin
*Hoshika S, Kawamoto C, Fukuoka A, Tanaka T, Sano H
(Hokkaido University, Sapporo, Japan)

- P19 The Effects of pH and Drying Time of Silane Solution on Tensile Bond Strength between Acrylic Denture Teeth and Heat Polymerized Denture Base Resin
**Koothathape N¹⁾, Purnaveja S¹⁾, Takahashi H²⁾, Arksornnukit M¹⁾*
(¹Chulalongkorn University, Bangkok, Thailand, ²Tokyo Medical and Dental University, Tokyo, Japan)
- P20 Influence of Acidic Monomer Included in Self-etching Primer on Polymerization of Dual-curing Resin Cement
**Hirabayashi S, Yoshida E, Hirano S*
(Tsurumi University, Yokohama, Japan)
- P21 The Effect of Priming Agents on the Shear Bond Strength of the Restorative Resin Materials Bonded to Zirconia
**Hatta M¹⁾, Shinya A^{1,2)}, Kishida S¹⁾, Kuroda S¹⁾, Lin J¹⁾, Hasegawa A¹⁾, Yokoyama D¹⁾, Gomi H¹⁾, Shinya A¹⁾*
(¹the Nippon Dental University, Tokyo, Japan, ²University of Turku, Turku, Finland)
- P22 Bond Strengths of Resin-modified Glass Ionomer Cements Measured by Both Tensile and Shear Bond Tests
**Kusano A^{1,2)}, Fujishima A²⁾, Kataoka Y²⁾, Takeuchi K²⁾, Tanaka R²⁾, Miyazaki T²⁾*
(¹Japan Self Defense Air Force, Saitama, Japan, ²Showa University, Tokyo, Japan)
- P23 Tensile Bond Strength between Resin Composite Foundation and 2 Different Fiber Reinforced Posts Using Pull-out Test Design
**Yavirach P¹⁾, Chaijareenont P²⁾, Koothathape N²⁾, Takahashi H³⁾, Arksornnukit M²⁾*
(¹Chiang Mai University, Chiang Mai, Thailand, ²Chulalongkorn University, Bangkok, Thailand, ³Tokyo Medical and Dental University, Tokyo, Japan)
- P24 Water Resistant of Composites Containing Filler Treated with a Novel Hydrophobic Silane
**Nihei T¹⁾, Kunzelmann KH²⁾, Ohashi K¹⁾, Kondo Y³⁾, Yoshino N³⁾, Teranaka T¹⁾*
(¹Kanagawa Dental College, Yokosuka, Japan, ²Dental School of LMU, Munich, Germany, ³Tokyo University of Science, Tokyo, Japan)
- P25 Effect of Polymerization Accelerator on Dentin Bonding of One-step Bonding Agent
**Wakamatsu S, Yamamoto N, Ori T, Hirayama S, Ikemi T*
(Nihon University School of Dentistry at Matsudo, Matsudo, Japan,)
- P26 The Influence of Adhesive Thickness on Bonding Strength of the New Bonding System –Tokuyama Bond Force
**Dodomi A, Matsushige K, Kimura M*
(Tsukuba Research Laboratory, Tokuyama Dental Corporation, Tsukuba, Japan)

- P27 Bond Strengths of Resin-based Luting Cement to Zirconia Ceramics Applied with Tribochemical Treatments with Functional Monomers
*Tanaka R, Fujishima A, Oguri T, Takeuchi K, Manabe A, Miyazaki T
(Showa University, Tokyo, Japan)
- P28 Appearance of Resin-dentin Interface Observed by FE-SEM
*Maseki T, Yamada T, Hara M, Hasegawa M, Suzuki T, Kimishima T, Nara Y
(the Nippon Dental University, Tokyo, Japan)
- P29 Etching Efficacy of Tooth by One Step and Two Step Adhesives
*Nishiyama N, Ma S, Fujita K, Shibuya I, Nomura M, Ikemi T, Aida M, Nemoto K
(Nihon University School of Dentistry at Matsudo, Matsudo, Japan)
- P30 The Degree of Conversion and Ultimate Micro-tensile Strengths of Four Self-etching Adhesive Systems
Trakoolsoontorn T¹), *Harnirattisai C¹), Egkasit S²), Senawongse P¹)
(¹Mahidol University, Bangkok, Thailand, ²Chulalongkorn University, Bangkok, Thailand)
- P31 All-in-one Self-etching Adhesives: HEMA-free without Phase Separation
*Furukawa M¹), Finger WJ²), Hoffmann M³), Kastrati A³), Hisamitsu H¹)
(¹Showa University, Tokyo, Japan, ²University of Cologne, Cologne, Germany, ³Heraeus Kulzer GmbH, Wehrheim, Germany)
- P32 Effects of Silanation Condition on Bond Strength between Glass and Composite Resin
*Babasono K¹), Takahashi H¹), Iwasaki N¹), Arksornnukit M²)
(¹Tokyo Medical and Dental University, Tokyo, Japan, ²Chulalongkorn University, Bangkok, Thailand)

Polymer: Composite Resin

- P33 Effects of Thermocycling on Woven and Unidirectional Silica-glass Fiber Reinforced Composites
*Meriç G¹), Ruyter IE²)
(¹University of Oslo, Oslo, Norway, ²Nordic Institute of Dental Materials, Haslum, Norway)
- P34 Comparison of the Effect of Storage Media on Hardness and Shear Punch Strength of Tooth-coloured Restorative Materials
*Bagheri R¹), Burrow MF²), Tyas MJ²)
(¹Shiraz Medical University, Shiraz, Iran, ²the University of Melbourne, Melbourne, Australia)
- P35 Failure Mode Evaluations of Fiber-reinforced Composites
*Tanoue N¹), Ide T¹), Atsuta M¹), Koizumi H²), Matsumura H²), McCabe JF³)
(¹Nagasaki University, Nagasaki, Japan, ²Nihon University, Tokyo, Japan, ³the University of Newcastle upon Tyne, Newcastle upon Tyne, United Kingdom)

- P36 Thermal Cycling and Cyclic Fatigue Tests of GFRC Clasps with Coating
*Takita F, Iwahori M, Wakamatu N, Doi Y, Miyao M
(Asahi University, Mizuho, Japan)
- P37 Mechanical Properties of a New Hard Resin for Crown and Bridge with Nano Filler
*Izumida A, Ishibashi M, Inagaki R, Kasahara S, Yoda M, Kimura K
(Tohoku University, Sendai, Japan)
- P38 Micro-shear Bond Strengths of Self-adhesive Resin Cements to Enamel and Dentin
*Kwon TY, Kim YK, Kim KH
(Kyungpook National University, Daegu, Korea)
- P39 Influence of the pH Value of Storage Media on Chemical Degradation of Restorative Composites
*Yan YL, Kwon TY, Kim YK, Kim KH
(Kyungpook National University, Daegu, Korea)
- P40 Effect of the Inhomogeneity of Light from Light-curing Units on the Surface Hardness of Composite Resin
*Arikawa H, Kanie T, Fujii K, Ban S
(Kagoshima University, Kagoshima, Japan)
- P41 Half-value Layer of Experimental Composite Resins Containing Radiopaque Materials
*Aoyagi Y¹⁾, Iwasaki N²⁾, Takahashi H²⁾, Honda E³⁾, Umemoto K¹⁾, Kurabayashi T²⁾
(¹Kanagawa Dental College, Yokosuka, Japan, ²Tokyo Medical and Dental University, Tokyo, Japan, ³ the University of Tokushima, Tokushima, Japan)
- P42 Dynamic Viscoelastic Properties and Degree of Conversion of Resin-based Restorative Materials
*Fujii K, Minami H, Arikawa H, Kanie T, Ban S
(Kagoshima University, Kagoshima, Japan)
- P43 Contraction Stress of Composite Measured by Crack Analysis in the Surrounding Cavity
*Yamamoto T¹⁾, Ferracane JL²⁾, Swain MV³⁾, Momoi Y¹⁾
(¹Tsurumi University, Yokohama, Japan, ² Oregon Health Sciences University, Portland, USA, ³University of Sydney, Sydney, Australia)
- P44 Application of Tribochemical Silica Coating for Failed Prosthetic Resin Composite for Facing Crown
*Sakoguchi K, Minami H, Muraguchi K, Kurashige H, Murahara S, Hori S, Onizuka T, Tanaka T
(Kagoshima University, Kagoshima, Japan)
- P45 The Effect of Water Temperature on the Impact Fatigue for Fiber Reinforced Composite
*Kuroda S¹⁾, Shimizu K²⁾, Lin J¹⁾, Kishida S¹⁾, Hasegawa A¹⁾, Hatta M¹⁾, Yokoyama D¹⁾, Shinya A¹⁾

(¹the Nippon Dental University, Tokyo, Japan, ²Sumitomo Dental Clinic, Tokyo, Japan)

- P46 Immediate Marginal Gap of Posterior Composites: Effect of Marginal Gap in the Teflon Mold
*Irie M¹, Oka M¹, Maruo Y¹, Nishigawa G¹, Suzuki K¹, Watts DC²)
(¹Okayama University, Okayama, Japan, ²Manchester University, Manchester, United Kingdom)
- P47 Influence of Heating on Mechanical Property of Light-curing Composite Resins
*Hashiguchi M, Nishi Y, Kishita C, Nagaoka E, Ban S
(Kagoshima University, Kagoshima, Japan)
- P48 Fluorine Uptake into Enamel around Fluoride-containing Materials during pH-cycling
*Komatsu H¹, Yamamoto H², Matsuda Y¹, Murata Y¹, Kijimura T¹, Kinugawa M¹, Sano H¹)
(¹Hokkaido University, Sapporo, Japan, ²Osaka University, Suita, Japan)
- P49 Chemical and Physical Properties of Experimental Magnetic Resin Composite Material
*Soma H, Miyagawa Y
(the Nippon Dental University School of Life Dentistry at Niigata, Niigata, Japan)
- P50 Structure of Worn Surfaces of Composite Resins after Combined Wear Test
*Kakuta K, Wonglamsam A, Goto S, Ogura H
(the Nippon Dental University School of Life Dentistry at Niigata, Niigata, Japan)
- P51 Color and Translucency of Core Materials
*Cha HS^{1,2}, Yu B¹, Lee YK¹)
(¹Seoul National University, Seoul, Korea, ²Ulsan University, Seoul, Korea)
- P52 Effect of Novel Photopolymerization Initiator System for Resin Composite
*Akizumi H, Kashimura M, Kazama H
(Tsukuba Research Laboratory, Tokuyama Dental Corporation, Tsukuba, Japan)
- P53 Pull-out Bond Strength between Fiber Posts and Composite Resin
*Asakawa Y¹, Kobayashi M¹, Takahashi H², Iwasaki N², Kohsaka K¹, Arksornnukit M³, Yavirach P⁴)
(¹ Chiba Institute of Technology, Chiba, Japan, ² Tokyo Medical and Dental University, Tokyo, Japan, ³Chiang Mai University, Chiang Mai, Thailand, ⁴ Chulalongkorn University Bangkok, Thailand)
- P54 Comparison of Volumetric Polymerization Shrinkage of Dental Resin Composites
*Miyachi T¹, Akimoto N¹, Suh BI², Momoi Y¹)
(¹Tsurumi University, Yokohama, Japan, ²Bisco Inc., Chicago, USA)

- P55 Effect of Fiber Contents on Flexural Properties of PMMA Fiber Posts
*Kousaka K¹⁾, Kobayashi M¹⁾, Takahashi H²⁾, Iwasaki N²⁾, Asakawa Y¹⁾
(¹Chiba Institute of Technology, Chiba Japan, ²Tokyo Medical and Dental University, Tokyo Japan)
- P56 Novel Ceramic Coating on Resin Composite
*Tanaka T¹⁾, Hanaoka K¹⁾, Yamaguchi M¹⁾, Shindo T²⁾, Teranaka T¹⁾
(¹Kanagawa Dental College, Yokosuka, Japan, ²Contamination Control Service, Sagamihara, Japan)
- P57 Application of Novel Low Viscous Monomeric Mixtures to Composite Resins
*Miyasaka T¹⁾, Okamura H¹⁾, Hagiwara T²⁾, Ito T²⁾
(¹the Nippon Dental University, Tokyo, Japan, ²CMET Co., Yokohama, Japan)
- P58 Color Properties of New Light-cure Fluoride Releasing Esthetic Restorative
*Katayama T, Ozawa Y, Hirose N, Henmi E, Ishihara S
(Meikai University, Sakado, Japan)

Polymer: Denture Base Resin

- P59 Basic Study of a New Soft Resin Applying Bisfunctional SiOXane Oligomer
*Umamoto K, Kurata S, Morishita K, Kawase T
(Kanagawa Dental College, Yokosuka, Japan)
- P60 Effect of Polymerization Temperature on the Flexural Strengths and Microhardness of Bis-acryl and PMMA Resins
*Ha JY, Kwon TY, Kim KH
(Kyungpook National University, Daegu, Korea)
- P61 Mechanical Properties of a Soft Liner Made of Methacrylate Monomers and Urethane Oligomers
*Kanie T, Kadokawa A, Arikawa H, Fujii K, Ban S
(Kagoshima University, Kagoshima, Japan)
- P62 Monitoring Drug Toxicity of Vinyl Esters with PCR Arrays
*Hashimoto Y¹⁾, Tanaka J²⁾, Suzuki K²⁾, Nakamura M¹⁾
(¹Osaka Dental University, Hirakata, Japan, ²Okayama University, Okayama, Japan)
- P63 Reinforcement of Resin Denture Base with Fiberglass Strengtheners
*Hirajima Y, Takahashi H, Nakamura M, Kaiba Y, Minakuchi S
(Tokyo Medical and Dental University, Tokyo, Japan)

- P64 Flexural Properties of Thermo-polymerized VE/PEMA Pastes
 *Tanaka J¹, Hashimoto Y², Nakamura M², Suzuki K¹)
 (¹Okayama University, Okayama, Japan, ²Osaka Dental University, Hirakata, Japan)
- P65 Denture Base Resin was Toughened by Core-shell Impact Modifier and Its Impact Properties
 *Ham MH, Choi DM, Oh MH
 (Vericom Co. Ltd., Gyeonggi-Do, Korea)
- P66 Development of Soft Denture Lining Materials Containing Fluorinated Monomers
 *Kasuga Y¹, Akiba N¹, Minakuchi S¹, Uchida T¹, Matsushita N², Hishimoto M², Hayakawa I¹)
 (¹Tokyo Medical and Dental University, Tokyo, Japan, ²Nissin Dental Products Inc., Kyoto, Japan)
- P67 Development and Evaluation of a New Temporary Resilient Lining Material which Maintains Softness for at Least a Month
 *Hashiguchi M, Terakado A, Kazama H
 (Tsukuba Research Laboratory, Tokuyama Dental Corporation, Tsukuba, Japan)
- P68 Fracture of the Denture Base Resins Part 1. Flexure Strength Test and Crack Propagation
 *Nakayama M, Koizumi J, Akama R, Yokoyama T
 (the Nippon Dental University College at Tokyo, Tokyo, Japan, Tokyo, Japan)
- P69 Fracture of the Denture Base Resins Part 2. Microscopic Observation
 Ichikawa M, *Takei R, Tomita A, Utsunomiya H, Shigehara H
 (the Nippon Dental University College at Tokyo, Tokyo, Japan)

Polymer: Impression Material

- P70 Effect of Moisture on the Rheological Properties of Acrylic Tissue Conditioners
 *Howashi S¹, Howashi G¹, Kaneto T¹, Kajiwara E¹, Inoue K², Masumi S¹)
 (¹Kyushu Dental College, Kitakyushu, Japan, ²Biomaterial Research Lab., Shimonoseki, Japan)
- P71 Degradation Control of Cross-linked Collagen by Green Tea Polyphenol, (-)-epigallocatechin-3-O-gallate
 Cho HH, Matsumura K, Tsutsumi S, *Hyon SH*
 (Kyoto University, Kyoto, Japan)
- P72 Effect of Blockage in Shark Fin Test –Evaluating Flowability of Impression Materials
 *Ohkuma K¹, Ogura H¹, Yapp R², Powers JM²)
 (¹the Nippon Dental University School of Life Dentistry at Niigata, Niigata, Japan, ²Dental Consultants Inc., Ann Arbor, USA)

Ceramics: Bioceramics

- P73 Mechanism of Hydroxyapatite Film Formation on Titanium Substrate by Thermally Induced Liquid-phase Deposition Method
**Endo K, Tamura M, Ohno H, Kawashima I, Yamane Y*
(*Health Sciences University of Hokkaido, Tobetsu, Japan*)
- P74 Bond Strength of Adhesive Resin Cement to Zirconia and Porcelain Block for CAD/CAM System
**Ishida Y, Ryukata I, Okada H, Noguchi H, Nagayama K*
(*Ohu University, Koriyama, Japan*)
- P75 Influence of Marginal Angle on Indentation Crack Lengths in Bonded Dental Ceramics
**Nishide A, Yamamoto T, Momoi Y*
(*Tsurumi University, Yokohama, Japan*)
- P76 X-ray Opacity of Zirconia, Alumina, and Titanium
**Ban S, Sato H, Miyamoto M, Yamashita D, Machigashira M*
(*Kagoshima University, Kagoshima, Japan*)
- P77 Quasi-superplastic Behavior and Physical Property in Sintered Carbonate Apatites
**Adachi M, Wakamastu N, Kamemizu H, Iijima M, Doi Y*
(*Asahi University, Mizuho, Japan,*)
- P78 Solubility of Strontium and Carbonate-substituted Calcium Phosphate Bone Cement Mixed with SrCl₂ Solution
**Fujihara E¹, Kawano F², Hamada K¹, Asaoka K¹*
(*¹the University of Tokushima, Tokushima, Japan, ²Tokushima Medical and Dental Hospital, Tokushima, Japan*)
- P79 A Novel Biodegradable Bone Graft Material
**Lee BH, Choi SH, Kim KN, Kim KM, Lee YK*
(*Yonsei University, Seoul, Korea*)
- P80 Investigation of Porous Glass-ceramic Materials Using Stearic Acid Additives
*Ho WF¹, Hon JF¹, Hsu HC², Chiang TY², *Wu SC²*
(*¹Da-Yeh University, Chang-Hwa, Taiwan, ²Central Taiwan University of Science and Technology, Taichung, Taiwan*)

- P81 Fabrication of Bi-layers Porous Glass-ceramic Scaffolds Using the Replication Methods
*Lin HC¹⁾, *Li TP¹⁾, Ho WF²⁾, Hsu HC¹⁾, Wu SC¹⁾*
(¹Central Taiwan University of Science and Technology, Taichung, Taiwan, ²Da-Yeh University, Chang-Hwa, Taiwan)
- P82 Fabrication of Low-crystalline Carbonate Apatite Foam Bone Replacement
**Takeuchi A¹⁾, Wakae H¹⁾, Matsuya S²⁾, Ishikawa K¹⁾*
(¹Kyushu University, Fukuoka, Japan, ²Fukuoka Dental College, Fukuoka, Japan)
- P83 Silica Coating by a Laser-assisted Rapid Process
**Hanaoka K¹⁾, Tanaka T¹⁾, Yamaguchi M¹⁾, Shindo T²⁾, Teranaka T¹⁾*
(¹Kanagawa Dental College, Yokosuka, Japan, ²Contamination Control Service, Sagamihara, Japan)
- P84 Bioactive Glass Ionomer Cements for the Tooth Regeneration Area
*Choi JY^{1,2)}, Yu HS¹⁾, Lee HH¹⁾, *Kim HW¹⁾*
(¹Dankook University, Cheonan, Korea, ²Shinsung College, Seoul, Korea)
- P85 Bonding Effectiveness of Resin Cements to CAD/CAM Hybrid Ceramic
**Hikita K, Maida T, Kawakami T, Tamura M, Yamane Y, Endo K, Ohno H*
(Health Sciences University of Hokkaido, Tobetsu, Japan)
- P86 Polarization of Porous and Dense Hydroxyapatite for Enhanced Bone Formation
Yamashita K
(Tokyo Medical and Dental University, Tokyo, Japan)

Ceramics: Cement

- P87 Bonding of Procera All Ceram Zirconia with Four Resin Bonding Systems
**Yoshida K, Atsuta M*
(Nagasaki University, Nagasaki, Japan)
- P88 Physical Properties of Light-activated Pulp Capping Materials
**Oh MH, Lee TH, Kim MH, Lim BS, Lee YK, Rhee SH, Yang HC*
(Seoul National University, Seoul, Korea)
- P89 Effect of Transparency of Experimental Cements on the Color of Indirect Resin Composite Placed on Different Colored Abutments
**Hasegawa Y¹⁾, Nakajima H¹⁾, Nagasawa Y¹⁾, Yamaga T¹⁾, Hibino Y¹⁾, Tawaragi T¹⁾, Kuramochi K¹⁾, Shimano I²⁾*
(¹Meikai University, Sakado, Japan, ²Asahi Dental Clinic, Saitama, Japan)

- P90 The Properties of a New Hydroxyapatite Glass Ionomer Cement
*Kimura A, Arita K
(the University of Tokushima, Tokushima, Japan)
- P91 Bond Strengths of Resin Cements to Cercon
*Murahara S, Hori S, Sakoguchi K, Muraguchi K, Minesaki Y, Onizuka T, Tanaka T
(Kagoshima University, Kagoshima, Japan)
- P92 Comparison of Physical Properties and Chemical Composition of Mineral Trioxide Aggregate and Other Pulp-capping Agents
*Nakamura H, Yamamoto M, Watanabe T, Nakamura A, Wanibe H, Nakata K, Tsuruta S, Kawai T
(Aichi-Gakuin University, Nagoya, Japan)
- P93 Bonding of Resin-modified Glass Ionomer to Dentin Treated with Citric Acid and/or Tannic Acid
*Yamaga T¹, Nakajima H¹, Nagasawa Y¹, Hasegawa Y¹, Hibino Y¹, Ishida K¹, Wada K¹, Kumakura M²
(¹Meikai University, Sakado, Japan, ²Kumakura Dental Clinic, Utsunomiya, Japan)
- P94 Shear Bond Strengths of Dental Cements for Luting to Zirconia Ceramics
*Takeuchi K¹, Fujishima A¹, Manabe A¹, Tanaka R¹, Kusano A^{1,2}, Hotta Y¹, Tamaki Y¹, Miyazaki T¹
(¹Showa University, Tokyo, Japan, ²Japan Self Defense Air Force, Saitama, Japan)
- P96 Deposits on Mineral Trioxide Aggregates Soaked in Simulated Body Fluid
*Watanabe T, Yamamoto M, Nakata K, Nakamura A, Wanibe H, Kitamura N, Tsuruta S, Kawai T, Nakamura H
(Aichi-Gakuin University, Nagoya, Japan)

Ceramics: Investment

- P97 Setting and Thermal Expansion of Phosphate-bonded Investments
*Hirose H¹, Sakaguchi S¹, Kikuchi H¹, Takahashi H², Yoneyama T¹
(¹Nihon University, Tokyo, Japan, ²Tokyo Medical and Dental University, Tokyo, Japan)
- P98 Feasibility of Titanium Casting Using Ceramic Mold with High Thermal Conductivity –Case of High-temperature Mold Using hBN Plate–
*Kanatani M, Okawa S, Watanabe K, Nakano S, Hotta N, Kobayashi M
(Niigata University, Niigata, Japan)

Ceramics: Model

P99 Effect of Zeta-potential of the Seed Crystals on Hardening of Gypsum

**Umemoto K, Kurata S, Yamada M, Nakahara S, Aoyagi Y*

(Kanagawa Dental College, Yokosuka, Kanagawa)

Ceramics: Porcelain

P100 Effect of Surface Grinding on the Flexural Strength and Structural Reliability of Zirconia Core Ceramics

*Her SB, Oh MH, *Kim MH, Lim BS, Lee YK, Rhee SH, Yang HC*

(Seoul National University, Seoul, Korea)

P101 Effect of Polymorphism of SiO₂ Addition on Mechanical Properties of Feldspathic Porcelains

**Tokunaga R¹, Takahashi H¹, Iwasaki N¹, Kobayashi M², Tonami K¹, Kurosaki N¹*

(¹Tokyo Medical and Dental University, Tokyo, Japan, ²Chiba Institute of Technology, Chiba, Japan)

P102 Development of Powder Metallurgical Ceria-stabilized ZrO₂/Al₂O₃ Nanocomposite for Electrophoretic Deposition

**Nakamura T¹, Nishida H², Usami H¹, Mutobe Y¹, Wakabayashi K¹, Akao T¹, Yatani H¹*

(¹Osaka University, Suita, Japan, ²Osaka Dental University, Hirakata, Japan)

P103 Comparison of the Bond Strengths of Porcelain Fused to Co-Cr Alloy and Other Metals

Suese K

(Osaka Dental University, Hirakata, Japan)

P104 Acid-etching of Titanium and Its Effect on Bonding Strength to Dental Porcelain

**Miyamoto M, Kono H, Sato S, Yamashita D, Machigashira M, Ban S*

(Kagoshima University, Kagoshima, Japan)

P105 Comparative Study on Three- and Four-point Flexure Bond Test for Dental Metal-ceramic System

*Lee SH¹, Kim KH², Kim HW¹, *Lee HH¹*

(¹Dankook University, Cheonan, Korea, ²Korea Railroad Research Institute, Uiwang, Korea)

P106 Fluorescent Emission of All-ceramic Core, Veneer and Layered Specimens

**Lee YK¹, Yu B¹, Ahn JS^{1,2}*

(¹Seoul National University, Seoul, Korea, ²Korea University Medical Center, Ansan, Korea)

P107 Modification Effect of Adding Catalyst in Silane Coupling Agent

**Ohashi K, Nihei T, Mori R, Kurata S, Umemoto K, Teranaka T*

(Kanagawa Dental College, Yokosuka, Japan)

P108 Fabrication of Ceramic Restoration by Rapid Prototyping Layering Method
*Sohmura T¹⁾, Matsumoto T¹⁾, Kumazawa Y²⁾, Ishikawa M¹⁾, Kirihara S¹⁾, Miyamoto Y¹⁾
(¹Osaka University, Suita, Japan, ²Bionic Co.Ltd., Osaka, Japan)

P109 All-ceramic Crown by New Method –The Third Report–
*Inoue T, Kakimoto K, Komasa Y
(Osaka Dental University, Hirakata, Japan)

Poster Presentation (P110 – P221) (Queen’s Park 2): Saturday, 10:15 am – 11:15 am

Metal: Casting

P110 Cast on Methods in Precision Metal Frame Works in Removable Partial Denture –Interface Evaluation between Primary and Secondary Castings under Different Mold Temperatures–
*Sakai T, Hideshima M, Takahashi H, Igarashi Y
(Tokyo Medical and Dental University, Tokyo, Japan)

Metal: Corrosion

P111 Corrosion Behavior of Water Pipe Metals in Electrolyzed Water
*Murakami S, Nagamatsu Y, Chen KK, Tajima K, Kakigawa H, Hosokawa R, Kozono Y
(Kyushu Dental College, Kitakyushu, Japan)

P112 Cyclic Voltammetry of Experimental Pd-free Low-gold Dental Alloys
*Fujita T, Shiraiishi T, Takuma Y, Miura E, Ogata T, Hisatsune K
(Nagasaki University, Nagasaki, Japan)

P113 Effect of Corrosion Behavior of Pure Titanium and Titanium Alloy on Fluoride Addition in Acidic Environment by *Streptococcus Mutans*
*Matono Y, Nakagawa M, Ishikawa K, Terada Y
(Kyushu University, Fukuoka, Japan)

Metal: Dental Alloy

P114 Hardening and Overageing Mechanisms in a Low-carat Dental Alloy Containing In
*Kim HI, Jeon GH, Lee SH, Kwon YH, Seol HJ
(Pusan National University, Pusan, Korea)

P115 Phase Transformation and Microstructural Changes during Ageing Process of an Ag-Pd-Cu-Au Alloy
Yu CH, Park MG, Kwon YH, *Seol HJ, Kim HI
(Pusan National University, Pusan, Korea)

- P116 Anodic Oxidation of Ni-Ti Orthodontic Wire in Different Solutions
*Homma K, Watanabe K, Okawa S, Kanatani M
(Niigata University, Niigata, Japan)
- P117 Reciprocal Tribocontact of Dental Alloys
*Fukui H¹⁾, Takei Y¹⁾, Tsuruta S¹⁾, Toyama M¹⁾, Niinomi M²⁾
(¹Aichi-Gakuin University, Nagoya, Japan, ²Tohoku University, Sendai, Japan)
- P118 MRI-artifact-free Gold Alloy for Biomedical Application
*Hamada K, Honda E, Asaoka K
(the University of Tokushima, Tokushima, Japan)
- P119 Basic Studies on Metallic Allergy
*Oshima H¹⁾, Endo K²⁾, Takada Y³⁾, Nakagawa M⁴⁾, Kawada E⁵⁾, Takahashi H⁶⁾, Nakamura M¹⁾
(¹Osaka Dental University, Hirakata, Japan, ²Health University of Hokkaido, Ishikari, Japan, ³Tohoku University, Sendai, Japan, ⁴Kyusyu University, Fukuoka, Japan, ⁵Tokyo Dental College, Chiba, Japan, ⁶Tokyo Medical and Dental University, Tokyo, Japan)
- P120 The Effects of Intermediate ZrO₂ Thin Layer on Metal Ion Release and Bonding Strength of Porcelain Coated Ni-Cr Dental Alloys
*Lin FT^{1,2)}, Chen YT¹⁾, Yang CC¹⁾, Liao LC²⁾, Lin SH²⁾, Lin CW²⁾, Yen SK¹⁾
(¹National Chung Hsin University, Taichung, Taiwan. ²Central Taiwan University of Science and Technology, Taichung, Taiwan)
- P121 Effect of Combined Addition of Ga and In on Properties of 50Pd-25Au-15Cu-10Ag Alloy
*Goto S, Ogura H
(the Nippon Dental University School of Life Dentistry at Niigata, Niigata, Japan)
- P122 Effects of Zr Content on the Electrochemical Characteristics of Ti-alloys
*Oh MY, Choe HC, Ko YM
(Chosun University, Gwangju, Korea)
- P123 Effects of Heat Treatment on the Microstructure of Ti-Hf Alloy
*Jeong YH, Choe HC, Ko YM
(Chosun University, Gwangju, Korea)
- P124 Effects of Nb Contents on the Surface Characteristics of Anodized Ti Alloys
*Jang SH, Choe HC, Ko YM
(Chosun University, Gwangju, Korea)

P125 Electrochemical Properties of MC3T3-E1 Cell Cultured Ti-Ta Alloy for Biomedical Applications
*Kim WG, Choe HC, Ko YM
(Chosun University, Gwangju, Korea)

P126 Discoloration and Weight Change of Ag-Sn-Zn-In Alloys Immersed in Three Electrolyzed Waters
*Aoki H, Yoshida T
(the Nippon Dental University, Tokyo, Japan)

P127 Fatigue Crack Growth Behavior of Au-Ag-Pd Alloys in Physiological Salt Solution
*Nishikawa I, Tsushima S
(Osaka Institute of Technology, Osaka, Japan)

Metal: Titanium

P128 Effect of Diode and Er/Cr:YSGG Laser Irradiation on Titanium Discs
Shin HS, *Lim BS, Lee YK, Rhee SH, Yang HC, Oh MH, Kim MH
(Seoul National University, Seoul, Korea)

P129 Characterization of Calcium Phosphate Compound Deposited on Valve Metals with Anodic Oxidation Process
*Okawa S, Homma K, Nakano S, Kanatani M, Watanabe K
(Niigata University, Niigata, Japan)

P130 Bonding Strength of Titanium-porcelian Influenced by Surface Treatments
*Wang C, Chen KK, Nagamatsu Y, Tajima K, Kakigawa H, Kozono Y
(Kyushu Dental College, Kitakyushu, Japan)

P131 Electrochemical Behavior and Biocompatibility of Ti-Zr Alloys for Dental Applications
Lin HC¹, Wang CF¹, Ho WF², Wu SC¹, *Hsu HC¹
(¹Central Taiwan University of Science and Technology, Taichung, Taiwan, ²Dayeh University, Changhua, Taiwan)

P132 Heat-treated TiO₂ Nanotubes: Hydroxyapatite Growth
*An SH¹, Kim WJ¹, Asaoka K², Kwon TY¹, Kim KH¹
(¹Kyungpook National University, Daegu, Korea, ²the University of Tokushima, Tokushima, Japan)

P133 Effect of Bath Temperature and Current Density on the Formation of Cathodic Hydroxyapatite
*Kim WJ, An SH, Kwon TY, Kim KH
(Kyungpook National University, Daegu, Korea)

- P134 Bending Strength in Hunk's Solution of Ti-based Alloy Joint Brazed by Pd-based Bulk Metallic Glass
 *Miura E¹⁾, Kato H²⁾, Nishiyama N²⁾, Fujita T¹⁾, Shiraishi T¹⁾, Hisatsune K¹⁾
 (¹Nagasaki University, Nagasaki, Japan, ²Tohoku University, Sendai, Japan)
- P135 Anti-bacterial Properties of Surface Modified Cp-titanium
 Kim BH¹⁾, Kim GS²⁾, Cho DL²⁾, Jung JR²⁾, Ohk SH²⁾, *Ko YM¹⁾
 (¹Chosun University, Gwangju, Korea, ²Chonnam National University, Gwangju, Korea)
- P136 Anti-bacterial Effect of Titanium Cast Plates Obtained from Mg-O-based Investement
 *Kaneshige S, Marutani Y, Tsukasaki H, Kaneishi A, Kataoka Y, Zhang Z, Cho HC, Tamaki Y, Miyazaki T
 (Showa University, Tokyo, Japan)
- P137 Morphology and Chemistry of Acid-etched Titanium-tissue Interface
 *Kubo K, Jinno M, Takayama M, Wada A, Sugita Y, Sato E, Maeda H
 (Aichi-Gakuin University, Nagoya, Japan)
- P138 Stress Analysis of the Surrounding Bone by the Different Form of Dental Implant
 *Ohta T, Tanino Y, Kashiwazaki H, Inoue N, Ohata N
 (Hokkaido University, Sapporo, Japan)
- P139 Surface Properties of HA Thin Films Deposition on Anodized Titanium
 *Lee K, Choe HC, Ko YM
 (Chosun University, Gwangju, Korea)

Biological Reaction: Biodegradation

- P140 Tensile Strengths of Ionizing γ -rays Irradiated Dentin after 1-year Storage
 *Iwasaki N¹⁾, Takahashi H¹⁾, Arksornnukit M²⁾, Miura M¹⁾, Reza F¹⁾, Loyaga-Rendon P¹⁾, Nakano F¹⁾
 (¹Tokyo Medical and Dental University, Tokyo, Japan, ²Chulalongkorn University, Bangkok, Thailand)
- P141 Improvement of Disintegration on Calciumphosphate Cement for Bone Filling Materials
 *Fukase Y, Sato T, Kaketani M, Yoneyama T
 (Nihon University, Tokyo, Japan)

Biological Reaction: Cell Reaction

- P142 Establishment of Dental Pulp Cell Line as a Screening Tool for Direct Pulp Capping Materials
 *Handa K, Koike T, Saito T
 (Health Sciences University of Hokkaido, Tobetsu, Japan)

- P143 Evaluation of the Embryotoxicity of Dental Alloys Containing Indium
*Imai K¹⁾, Goto S²⁾, Ogura H²⁾, Kuwagata M³⁾, Senuma M³⁾, Furuya M³⁾, Takashima H³⁾, Nakamura M¹⁾
(¹Osaka Dental University, Hirakata, Japan, ²the Nippon Dental University School of Life Dentistry at Niigata, Niigata, Japan, ³Hatano Research Inst., Food and Drug Safety Center, Kanagawa, Japan)
- P144 Implantation Test of the Dextrin-HAP Complex for Bone Filling Material
*Asai T, Hayashi T, Takei Y, Kuroki K, Okano M, Hamajima S, Kataoka H, Kawai T
(Aichi-Gakuin University, Nagoya, Japan)
- P145 Safety of Dental Magnetic Attachments on the Basis of Bone Compatibility and Activities of Osteoblasts
*Takada Y, Taira M²⁾, Takahashi N¹⁾, Okuno O¹⁾
(¹Tohoku University, Sendai, Japan, ²Iwate Medical University, Morioka, Japan)
- P146 Effect of Calcium Ions on Hematopoietic Stem Cell Niche-related Gene Expression in Osteoblast
*Matsumoto T¹⁾, Nakamura S²⁾, Nakahira A²⁾, Sohmura T¹⁾
(¹Osaka University, Suita, Japan, ²Osaka Prefecture University, Sakai, Japan)
- P147 Evaluation of Waveform-like Pattern between Surface Composition and Cell Proliferation Using Self-assembled Monolayers
*Hirata I, Fuse Y, Okazaki M
(Hiroshima University, Hiroshima, Japan)
- P148 Study of the Differentiation of Chondrogenic Cell Line ATDC5 on Porous Titanium
*Maeda H, Jinno M, Takayama M, Wada A, Kubo K, Sugita Y, Sato E, Suzumura Y, Kawai T
(Aichi-Gakuin University, Nagoya, Japan)
- P149 Biofilm Forming-bacteria on Acrylic Resin Dentures
*Kamemizu T, Kakimoto K, Komasa Y
(Osaka Dental University, Hirakata, Japan)
- P150 Isolation of Biofilm-forming Bacteria from Denture Plaque by Using Turbidity of Culture Medium and Calcofluor Reaction
*Yamane K, Sugimori C, Yamanaka T, Fukushima H
(Osaka Dental University, Hirakata, Japan)
- P151 Biological Impact of Contact with Zirconia on Cells
*Konno C¹⁾, Yamazaki T¹⁾, Yamazaki A¹⁾, Hibino Y¹⁾, Nakajima H¹⁾, Sakagami H¹⁾, Vallittu PK²⁾, Shimada J¹⁾
(¹Meikai University, Sakado, Japan, ²University of Turku, Turku, Finland)

P152 Disruption of Amino Acid Metabolism during the Cell Death Induced by Contact to Metals

*Onuki H, Yamazaki T, Yamazaki A, Hibino Y, Nakajima H, Sakagami H, Shimada J
(Meikai University, Sakado, Japan)

Biological Reaction: Disinfection and Sterilization

P153 Surface Modification for Structural and Hydrophobic Properties of Plasma-based Fluorine and Silver Dual Ion Deposited Stainless Steel

*Shinonaga Y, Arita K
(the University of Tokushima, Tokushima, Japan)

P154 Establishment of *in vitro* DUWLs Biofilm Model and Assessment of Inhibitory Effects of Fluoride-coating Tube on Biofilm Formation

*Yabune T, Imazato S, Ebisu S
(Osaka University, Suita, Japan)

P155 Inhibition of Growth of *Streptococcus Mutans* by Artificial Glyco-polymer

*Akasaka T, Abe S, Uo M, Watari F
(Hokkaido University, Sapporo, Japan)

Biological Reaction: Implant

P156 High Resolution Observation of Carbon Nanotubes Implanted in Tissue by High Voltage Electron Microscopy

*Watari F¹⁾, Sakaguchi N¹⁾, Nodasaka Y¹⁾, Yokoyama A¹⁾, Akasaka T¹⁾, Hirata E¹⁾, Ichinose H²⁾
(¹Hokkaido University, Sapporo, Japan, ²Riken, Wako, Japan)

P157 XAFS Analysis of Ti, Ni-Ti and SUS304 Implanted Rat Soft Tissues

*Uo M, Akasaka T, Abe S, Watari F
(Hokkaido University, Sapporo, Japan)

P158 Bone Formation on Grooved Titanium Implant Extracted from Rat Bone

*Watanabe K, Okawa S, Kanatani M, Homma K, Nakano S, Kobayashi M
(Niigata University, Niigata Japan)

P159 Three-dimensional Finite Element Modelling of Mandible Directly Constructed from *in vivo* CT Images—Stress Distributions of Bone around an Implant—

*Hasegawa A¹⁾, Yokoyama D¹⁾, Shinya A^{1,2)}, Yanai C¹⁾, Kishida S¹⁾, Kuroda S¹⁾, Lin J¹⁾, Ide Y¹⁾, Hatta M¹⁾, Gomi H¹⁾, Lassila LVJ²⁾, Kumazawa Y¹⁾, Nakasone Y³⁾, Vallittu PK²⁾, Shinya A¹⁾
(¹the Nippon Dental Univ., Tokyo, Japan, ²Univ. of Turku, Turku, Finland, ³Tokyo Univ. of Science, Tokyo, Japan)

P160 Three-dimensional Finite Element Analysis of Bone-implant Interface with Fiber Reinforced Composite Implant and Titanium Implant

*Shinya A^{1,2}, Lassila LVJ², Ballo A², Shinya A¹, Närhi T², Vallittu PK²)

(¹University of Turku, Turku, Finland, ²the Nippon Dental University, Tokyo, Japan)

P161 Alternate Soaking for Apatite Coating on Ti

*Yano H¹, Kono H², Kurashige H¹, Ban S¹, Tanaka T¹)

(¹Kagoshima University, Kagoshima, Japan, ²Imakiire General Hospital, Kagoshima, Japan)

P162 Chemical, Mechanical, and Biological Properties of Titanium Implant Surface Treated with Polyphosphoric Acid

*Maekawa K¹, Yoshida Y¹, Hirata F², Okazaki M², Suzuki K¹, Kuboki T¹)

(¹Okayama University, Okayama, Japan, ²Hiroshima University, Hiroshima, Japan)

P163 A Carbonate Apatite Thin Layer Biomimetically Coated onto SAM-Ti Substrate Surfaces

*Yamaguchi Y, Yamamoto K, Doi Y

(Asahi University, Mizuho, Japan)

Biological Reaction: Tissue Engineering

P164 Application of rhBMP-2/FRIOS[®] Algipore[®] Composite to Direct Pulp Capping

*Koike T, Handa K, Saito T

(Health Sciences University of Hokkaido, Tobetsu, Japan)

P165 Collagen Biosynthesis in a Periosteal Cell Pellet Culture System

*Akiyama M, Nakamura M

(Osaka Dental University, Hirakata, Japan)

P166 The Evaluation of Low-intensity Ultrasound on Dental Implant Osseointegration

Liao LC¹, *Li SM¹, Kung JY^{1,2}, Lin HS¹, Chang CJ¹)

(¹Central Taiwan University of Science and Technology, Taichung, Taiwan, ²Chang Bing Show Chwan Memorial Hospital, Changhau, Taiwan)

P167 *In vitro* Evaluation of Biocompatibility of Porous Bioglass as a Bone Substitute

*Lin FT^{1,2}, Wang S¹, Wu SS¹, Hsu SK¹)

(¹Central Taiwan University of Science and Technology, Taichung, Taiwan, ²National Chung Hsing University, Taichung, Taiwan)

P168 Examination of Two Abnormal Dental Tissues

*Kawashima I, Ohno H, Endo K, Yamane Y

(Health Sciences University of Hokkaido, Tobetsu, Japan)

- P169 Bone Formation Ability of Newly Developed CO₃Ap-collagen Sponges
**Matsuura A, Kubo T, Doi K, Hayashi K, Morita K, Hirata I, Okazaki M, Akagawa Y*
(Hiroshima University, Hiroshima, Japan)
- P170 Micro-CT Based Quantification of Bone-regeneration Achieved with Nano β-TCP Reinforced Collagen Scaffold
**Yamaki K, Ata F, Murakami A, Kataoka Y, Mayahara M, Shibata Y, Miyazaki T*
(Showa University, Tokyo, Japan)
- P171 Microparticle of Alginate from *Sargassum* Species
**Irawan BB¹, Musolino D², Lazzeri L², Ahluwalia A²*
(¹University of Indonesia, Jakarta, Indonesia, ²University of Pisa, Pisa, Italy)
- P172 Utility of an Injectable 3D Scaffold for Osteoblast Differentiation Depends on Pore Size
**Adachi S¹, Hashimoto Y¹, Matsuno T², Yamauchi Y², Omata K², Satoh T² and Nakamura M¹*
(¹Osaka Dental University, Hirakata, Japan, ²the Nippon Dental University, Tokyo, Japan)

Biological Reaction: Toxicity

- P173 Determination of Administered Magnetite Nanoparticles in Mice: Magnetic Resonance Imaging and X-ray Scanning Electronic Microscope
*Esaki M¹, *Abe S¹, Kida I¹, Akasaka T¹, Uo M¹, Kuboki Y^{1,2}, Watari F¹*
(¹Hokkaido University, Sapporo, Japan, ²Koken Bioscience Institute, Tokyo, Japan)
- P174 Visualization of Distribution of Inorganic Micro/Nano Particles in Mice Using X-ray Scanning Electronic Microscope
**Abe S¹, Koyama C¹, Akasaka T¹, Uo M¹, Kuboki Y^{1,2}, Watari F¹*
(¹Hokkaido University, Sapporo, Japan, ²Koken Bioscience Institute, Tokyo, Japan)
- P175 Cytotoxicity of Soft and Hard Denture Lining Materials on MA-104, Vero and Primary Tooth Cell Culture
**Tukay HA¹, Bayindir F², Akyil S¹, Atay A¹, Oruc S¹*
(¹Gulhane Military Medical Academy, Istanbul, Turkey, ²University of Ataturk, Erzurum, Turkey)
- P176 Cytotoxicity of a Soft Liner Made of Urethane Polymers
**Tomita K, Tabuti S, Takenaka A, Tokuda M, Torii M, Kanie T, Ban S*
(Kagoshima University, Kagoshima, Japan)
- P177 Two Different Approaches to Reduce the Cytotoxicity Induced by Contact to Cu Plate
**Yamazaki T, Yamazaki A, Hibino Y, Nakajima H, Sakagami H, Shimada J*
(Meikai University, Sakado, Japan)

P178 Development of Multi Walled Carbon Nanotubes Coated Collagen for Cell Culturing

**Terada M, Uo M, Kitagawa Y, Watari F*

(Hokkaido University, Sapporo, Japan.)

P179 Cytotoxicity Evaluation of Tricalcium Phosphate on Human Osteoblast Cell

**Mohamad D, Omar S, Hashim S*

(Universiti Sains Malaysia, Kubang Kerian, Malaysia)

Clinical Application: Conservative

P180 Influence of Brushing Force on Toothbrush Abrasion of Human Teeth

*Hotta M¹⁾, Endo T¹⁾, *Imade S²⁾, Sano A²⁾, Yamamoto K¹⁾*

(¹Asahi University, Mizuho, Japan, ²Jacks Co., Ltd., Osaka, Japan)

P182 Effects of Ammonium Hexafluorosilicate Concentration on Occluding Ability of Dentin Tubules *in vitro*

**Suge T¹⁾, Ishikawa K²⁾, Matsuo T¹⁾*

(¹the University of Tokushima, Tokushima, Japan, ² Kyushu University, Fukuoka, Japan)

P183 Nanoindentation Study of Bovine Enamel Treated with Peroxide Solution

**Ushigome T, Takemoto S, Hattori M, Yoshinari M, Kawada E, Oda Y*

(Tokyo Dental College, Chiba, Japan)

P184 Efficacy of Intracoronal Bleaching Used Titanium Dioxide and 3.5% Hydrogen Peroxide

**Suemori T, Kato J, Nakazawa T, Akashi G, Hirai Y*

(Tokyo Dental College, Chiba, Japan)

P185 Color Change of Tooth Caused by the Condition of Drying and Wetting

**Ikejima I, Harada C, Momoi Y*

(Tsurumi University, Yokohama, Japan)

P186 The Localization of Matrix Metalloproteases in Sound and Caries Dentin

**Shimada Y, Ichinose S, Yuan Y, Sadr A, Tagami J*

(Tokyo Medical and Dental University, Tokyo, Japan)

P187 Effects of Office Whitening Agents on Extracted Human Teeth

**Ishikawa A, Ishii Y, Okada I*

(the Nippon Dental University, Tokyo, Japan,)

P188 Evaluation of the Satisfaction Level of the Parents for their Child Treated with the Newly Developed Coating Materials to the Discolored Deciduous Tooth

**Shimada Y, Ikeda K, Manabe A, Inoue M*

(Showa University, Tokyo, Japan)

P189 A Study of Bleaching System with Photocatalyst

(Development of No Peroxide Added Bleaching Agent)

*Nonami T¹⁾, *Narukawa M²⁾, Yamagami H²⁾, Kito T²⁾, Sunaguchi K³⁾*

(¹Chukyo University, Nagoya, Japan, ²Soiree Co.,Ltd., Yokohama, Japan, ³Whitening Co.,Ltd., Osaka, Japan)

Clinical Application: Oral Surgery

P190 Porous Carbonate Apatite with Basic Fibroblast Growth Factor in Bone Augmentation

**Kanayama K, Kitago M, Shiraki M, Doi Y, Shibutani T*

(Asahi University, Mizuho, Japan)

P191 Efficacy of Bone Regeneration with Bioabsorbable Composite GBR Membranes

**Koyama Y¹⁾, Kikuchi M²⁾, Miyairi H³⁾, Takakuda K¹⁾*

(¹Tokyo Medical and Dental University, Tokyo, Japan, ²Biomaterials Center, NIMS, Tsukuba, Japan, ³Tokyo Denki University, Tokyo, Japan)

P192 An Experimental Component Analysis of Three Commercial Brands of Gutta-Percha

**Saghiri MA¹⁾, Saghiri AM²⁾, Aminsobhani M³⁾*

(¹Young Researchers Club, Tehran, Iran, ²Material Simulation Center, Tehran, ³Tehran school of Dentistry, Tehran, Iran)

P193 Mechanical Properties of EVA for Mouth Guards

**Kono H¹⁾, Ban S²⁾, Kanie T²⁾, Akane T¹⁾, Yoshida M¹⁾*

(¹Imakiire General Hospital, Kagoshima, Japan, ²Kagoshima University, Kagoshima, Japan)

Clinical Application: Prosthetic

P194 Sulcus Depth Reproduction with Elastomeric Impression Materials

**Kurokawa R¹⁾, Finger WJ²⁾, Takahashi H³⁾*

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P195 The Effect of Color of a Fiber Post on the Clinical Handleability

**Kinuta S, Wakabayashi K, Nakamura T, Sohmura T, Yatani H*

(Osaka University, Suita, Japan)

- P196 The Measurement of the Artificial Tooth Color by the Dental Colorimeter
**Yamauchi M, Kasamura K, Okada M, Fukuhara T, Mio M, Akatsuka H, Toyoda M*
(Asahi University, Mizuho, Japan)
- P197 Tensile Bond Strength between Silane Modified Surface of Denture Teeth and Heat Polymerized Denture Base Resin
**Prayadsab P¹⁾, Anusornnitisarn S¹⁾, Purnaveja S¹⁾, Takahashi H²⁾, Arksornnukit M¹⁾*
(¹Chulalongkorn University, Bangkok, Thailand, ²Tokyo Medical and Dental University, Tokyo, Japan)
- P198 Wear Resistance of Various Acrylic Resin Teeth
**Supa-amornkul C¹⁾, Purnaveja S¹⁾, Takahashi H²⁾, Arksornnukit M¹⁾*
(¹Chulalongkorn University, Bangkok, Thailand, ²Tokyo Medical and Dental University, Tokyo, Japan)
- P199 The Flexural Strength of Composite Resin Reinforced by Glass and Polyethylene Fiber
**Chaijareenont P, Boonsiri I*
(Chulalongkorn University, Bangkok, Thailand)
- P200 Scanning Electron Microscope Observation of TiO₂ Coating on Acrylic Resin for Denture Base
**Amano D, Ueda T, Sugiyama T, Takemoto S, Oda Y, Sakurai K*
(Tokyo Dental College, Chiba, Japan)
- P201 Assessment of the Pronunciation of /S/ Sound in Subjects with Sound Dentition Using a Speech Recognition System
**Hideshima M¹⁾, Wada J¹⁾, Ando T¹⁾, Inukai S¹⁾, Sato M¹⁾, Igarashi Y¹⁾, Matsuura H²⁾*
(¹Tokyo Medical and Dental University, Tokyo, ²Toshiba Corp., Kanagawa, Japan)
- P202 Laser Welding Today in Prosthetic Scene
**Hanatani S^{1,3)}, Togaya T^{2,3)}, Ohkubo C^{1,3)}, Ishikawa C^{1,3)}, Miura E^{1,3)}, Moriyasu K¹⁾, Hayashi D^{1,3)}, Muraishi E^{1,3)}, Mizuno Y^{1,3)}, Hosoi T^{1,3)}*
(¹Tsurumi University, Yokohama, Japan, ²Kyoto University, Kyoto Japan, ³DLP Forum, Osaka, Japan)
- P203 Fracture Analysis of Fiber-reinforced Composite Retainer in the Telescopic Overdentures
**Nagata K, Takahashi H, Hosomi H, Sato M, Wadachi J, Ona M, Igarashi Y*
(Tokyo Medical and Dental University, Tokyo, Japan)
- P204 Dissolving Efficacy of % 2 Chlorhexidine Glukonat Mouthwash on Dental Luting Cements
**Tukay A¹⁾, Gozneli R²⁾, Atay A¹⁾, Cudi M³⁾, Oruc S¹⁾*
(¹Gulhane Military Medical Academy of Haydarpasa, Istanbul, Turkey, ²University of Marmara, Istanbul, Turkey, ³University of Istanbul, Istanbul, Turkey)

Equipment and Technology: CAD/CAM

- P205 Algorithm Development for Making Average Tooth Form
**Lee SP, Lee JH, Heo MS, Kim JW, Chang MS, Rho SH, Nam SE*
(*Seoul National University, Seoul, Korea*)
- P206 Dental Implant Surgery Support System Using CAD/CAM Method
**Otani T¹, Kusumoto N¹, Wakabayashi K¹, Yamada S¹, Nakamura T¹, Yatani H¹, Sohmura T¹
Morishima M², Kumazawa Y²*
(*¹Osaka University, Suita, Japan, ²Wada Precision Dental Lab, Osaka, Japan*)
- P207 Evaluation of Subsurface Damages in All-ceramic Crowns Fabricated by a CAD/CAM System
**Nonogaki R, Uno M, Kurachi M, Wakamatsu N, Doi Y*
(*Asahi University, Mizuho, Japan*)
- P208 Effects of Post-sintering on the Axial Surface Fit of CAD/CAM Fabricated Zirconia Frameworks
**Kunii J, Hotta Y, Miyazaki T, Ozawa A, Tamaki Y, Fujishima A, Fujiwara T, Mori K*
(*Showa University, Tokyo, Japan*)
- P209 Form Reproducibility and Conformity of Different Preparation Models Using Newly Developed Digitizing Software
**Hotta Y, Kunii J, Ozawa A, Mori K, Fujiwara T, Nakano H, Miyazaki T, Maki K*
(*Showa University, Tokyo, Japan*)
- P210 Application of Haptic Device to Dentistry –Inter-objects Tactile Force Feedback System–
**Wakabayashi K¹, Takeshige F¹, Nakamura T¹, Noborio H², Yatani H¹, Sohmura T¹*
(*¹Osaka University, Suita, Japan, ²Osaka Electro-Communication University, Osaka, Japan*)

Equipment and Technology: Laser

- P211 Development of Medical Ozonized Oil Manufacturing Equipment
**Arai K¹, Ando N²*
(*¹Meikai University, Sakado, Japan, ²the Nippon Dental University, Tokyo, Japan*)
- P212 Selective Removal of Caries using Laser Absorption Properties with Experimental Caries-detecting Dye Solutions
**Yoshikawa K¹, Zennyu K¹, Hatashita Y¹, Tanaka Y¹, Miki H¹, Suzuki K¹, Iwata N¹, Yamamoto K¹,
Awazu K²*
(*¹Osaka Dental University, Hirakata, Japan, ²Osaka University, Suita, Japan*)

P213 Permeability of the 405-nm Diode Laser Light into the Dentin

**Akashi G, Kato J, Suemori T, Nakazawa T, Hirai Y*

(Tokyo Dental College, Chiba, Japan)

P214 The Influence of Water on Ablation of Teeth by Er:YAG Laser

**Fukuoka T, Kakimoto K, Komasa Y*

(Osaka Dental University, Hirakata, Japan)

P215 Surface Modification of Titanium by Blue-violet Laser

**Kawano T, Oka K, Ichikawa T*

(the University of Tokushima, Tokushima, Japan)

Equipment and Technology: Machinery Process

P216 Fracture Behavior of Glass Fiber Reinforced Composite Resin

**Yamada S¹, Kasahara S², Kumano J¹, Kamata M¹, Shimakura M¹, Yoda M²*

(¹Ohu University, Koriyama, Japan, ²Tohoku University, Sendai, Japan)

Equipment and Technology: Numerical Analysis

P217 Design and Finite Element Analysis of Circumferential Cast Clasps

**Sandu L¹, Topală F¹, Faur N², Borțun C¹, Porojan S¹*

(¹ “Victor Babeș” University of Medicine and Pharmacy, Timișoara, Romania, ²Politehnica University, Timișoara, Romania)

Equipment and Technology: Test Method

P218 Adsorption of an Antibacterial Protein onto Dental Material-related Surfaces Investigated by QCM Method

**Nezu T, Sasaki K, Saitoh S, Taira M, Araki Y*

(Iwate Medical University, Morioka, Japan)

P219 Absorption of Impact Force of Mouth Guard Materials by New Impact Testing Device. Part 2 –Evaluation of an Experimental and Commercial Mouth Guard Materials

**Reza F¹, Takahashi H¹, Iwasaki N¹, Loyaga-Rendon P¹, Tanaka J², Tanaka S¹*

(¹Tokyo Medical and Dental University, Tokyo, Japan, ²Okayama University, Okayama, Japan)

P220 Use of Powered Toothbrush with Oscillating-rotating Brush Head to Evaluate Wear Behavior of Resin Composites

**Minami H¹, Kurashige H¹, Fujii K¹, Suzuki S², Tanaka T¹*

(¹Kagoshima University, Kagoshima, Japan, ²University of Alabama at Birmingham, Birmingham, USA)

P221 Microplasma Welding Applied to Ni-Cr Alloys Used in Fixed Prosthodontics

**Porojan S, Sandu L, Topală F, Borțun C*

("Victor Babeș" University of Medicine and Pharmacy, Timișoara, Romania)

P222 The Demineralization Pattern of Dentin Grooves under the Condition of an Automatic pH-cycling System

**Matsuda Y, Murata Y, Kijimura T, Kinugawa M, Tanaka T, Komatsu H, Sano H*

(Hokkaido University, Sapporo, Japan)

