

# The 41th General Session of the Japanese Society for Dental Materials and Devices (JSDMD)

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2003 SPRING (4/18–4/19) in TOKYO

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## ANNOUNCEMENT

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Friday, April 18th

Hall A

10:00–11:00 Oral Presentations

**A-01** Degradation of biodegradable composite materials containing calcium carbonate

○Munehiro TSUNODA, Yohji IMAI  
Tokyo Med and Dent Univ

**A-02** Adsorption and release properties of bisphosphonate on the bisphosphonate-hydroxyapatite complex

○Hisashi SESHIMA, Masayuki HATTORI, Kouji HASEGAWA, Masao YOSHINARI, Eiji KAWADA, Yutaka ODA  
Tokyo Dental College Department of Dental Materials Science

**A-03** Application of haptic device to dentistry (Part 1) – Support for implant surgery –

○Taiji SOHMURA<sup>1</sup>, Naoki KUSUMOTO<sup>1</sup>, Kazumichi WAKABAYASHI<sup>1</sup>, Shinichi YAMADA<sup>1</sup>, Takashi NAKAMURA<sup>1</sup>, Hideyuki OKU<sup>2</sup>, Junzo TAKAHASHI<sup>1</sup>  
<sup>1</sup>Osaka Univ, <sup>2</sup>Iseikai Hospital

**A-04** Evaluation of properties and biocompatibility of nitrided titanium/apatite functionally graded implants fabricated by spark plasma sintering method

○Hideomi KONDO<sup>1</sup>, Aturo YOKOYAMA<sup>1</sup>, Takao KAWASAKI<sup>1</sup>, Motohiro UO<sup>2</sup>, Syouji OOKAWA<sup>2</sup>, Toshi SUGAWARA<sup>2</sup>, Tukasa AKASAKA<sup>2</sup>, Fumio WATARI<sup>2</sup>  
<sup>1</sup>Hokkaido Univ Graduate School of Dental Medicine, <sup>2</sup>Hokkaido Univ Graduate School of Dental Medicine

14:15–17:00 Oral Presentations

**A-05** Preparation of collagen sponge by bubbling method and trial of cell seeding

○Masayuki TAIRA, Setsuo SAITOH, Tsuneo FUKUOKA, Yoshima ARAKI  
Iwate Medical Univ

**A-06** Studies on risk assessment of dental materials–Evaluation of bioassay method using osteoblast–

○Yuji NOMURA, Wataru TESHIMA, Toshiya KAWAHARA, Nobuyuki TANAKA, Hideaki SHINTANI, Isao HIRATA, Kunio WAKASA, Masayuki OKAZAKI

Hiroshima Univ

**A-07** Pathobiological response to carbon-nanotubes and nano micro particles

○ Kazuchika TAMURA<sup>1,2</sup>, Yasunori TOTSUKA, Tsukasa AKASAKA, Motohiro UO, Shouzi OHKAWA, Toshi SUGAWARA, Fumio WATARI  
Hokkaido Univ

**A-08** Intraperitoneal model analysis of bone formation on poling ceramics

○ Hiroshi ARAI, Takayuki KOBAYASHI, Satoshi NAKAMURA, Kimihiro YAMASHITA  
Tokyo Med and Dent Univ

**A-09** Application of haptic device to dentistry (Part 2) – Support for surgical orthodontics –

○ Taiji SOHMURA<sup>1</sup>, Kazumichi WAKABAYASHI<sup>1</sup>, Hirokazu HOJOH<sup>2</sup>, Hideyuki OKU<sup>3</sup>, Takashi NAKAMURA<sup>1</sup>, Junzo TAKAHASHI<sup>1</sup>  
<sup>1</sup>Osaka Univ, <sup>2</sup>Osaka Dental Univ, <sup>3</sup>Iseikai Hospital

**A-10** Examination of factors affecting on the flexural rupture of FRP orthodontic wires under wet conditions

○ Satoru TANAKA<sup>1</sup>, Shuichi YAMAGATA<sup>1</sup>, Masaru UGA<sup>1</sup>, Nobusuke SUWA<sup>1</sup>, Junichiro IIDA<sup>1</sup>, Motohiro UO<sup>1</sup>, Syouji OOKAWA<sup>1</sup>, Tukasa AKASAKA<sup>1</sup>, Toshi SUGAWARA<sup>1</sup>, Fumio WATARI<sup>1</sup>, Masahiro KOBAYASHI<sup>2</sup>  
<sup>1</sup>Hokkaido Univ, <sup>2</sup>chiba institute of technology

**A-11** Analysis of internal and external forces of a human mandible invested by strength of materials:

Influence of a variation of dimension in mandibular right-and-left direction

○ Masaaki KUSANO, Tadaaki KIRITA  
Nara Medical Univ

**A-12** Is the hybrid layer necessary for the resin-dentin adhesion?

○ Toshimoto YAMADA, Jumpei SUGIZAKI, Makoto MORIGAMI, Nobuhiro KATAHIRA, Sumie YONEDA  
Toranomon Hospital Dental Clinic

**A-13** Dentine bonding system (adhesion theory)

○ Kunio WAKASA<sup>1</sup>, Atsuharu IKEDA<sup>1</sup>, Yuuji NOMURA<sup>1</sup>, Masayuki OKAZAKI<sup>1</sup>, Hideaki SHINTANI<sup>1</sup>, Hidehiko SANO<sup>2</sup>  
<sup>1</sup>Hiroshima Univ, <sup>2</sup>Univ of Hokkaido

**A-14** Shear bond strength of TMX-200 to enamel

○ Chieko IMAMIYA, Ayano ISHIKAWA, Yasushi SHIMADA, Jyunji TAGAMI  
Tokyo Med and Dent Univ

**A-15** Shrinkage kinetics of acid etched dentin (part2)

○ Kousuke ITOU<sup>1</sup>, Yasuhiro TORII<sup>1</sup>, Yasuhiro YOSHIDA<sup>1</sup>, Kazuomi SUZUKI<sup>1</sup>, Masahiro YOSHIYAMA<sup>1</sup>, David PASHLEY<sup>2</sup>  
<sup>1</sup>Okayama Univ, <sup>2</sup>Medical college of Georgia

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## Hall B

### 10:00–11:00 Oral Presentations

**B-01** New process of Ni-free stainless steel for dental materials and devices

○ Takao HANAWA, Daisuke KURODA  
Natl Inst Materials Science

**B-02** Physical properties and solidification structure of the dental metals in the high temperature (Part 3) –Dental casting alloy for Metal–Ceramic–

○ Sakae NAGASAWA, Takamitsu YOSHIDA, Nobuyoshi TERASHIMA, Toshihide MIZOGUCHI, Hiroshi YAGASAKI, Michio ITO  
Matsumoto Dental Univ

**B-03** Effect of Cu on fatigue characteristic of Ag–Pd–Cu–Au–Zn alloy

○ Toshio MIZUMOTO<sup>1</sup>, Mitsuo NIINOMI<sup>1</sup>, Toshikazu AKAHORI<sup>1</sup>, Hisao FUKUI<sup>2</sup>  
<sup>1</sup>Toyohashi Univ of Technology, <sup>2</sup>Aichi–Gakuin Univ

**B-04** Hardening mechanism of a dental casting gold–silver–palladium alloy by higher–temperature heat–treatment

○ Yasuhiro TANAKA, Hyo–Joung SEOL, Toshiaki OGATA, Eri MIURA, Takanobu SHIRAISHI, Kunihiro HISATSUNE  
Nagasaki Univ

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## 15:00–17:00 Oral Presentations

**B-05** Corrosion behavior and bioactivity of titanium alloys adding elements of the platinum group

○ Masaharu NAKAGAWA, Lei ZHANG, Koh–ichi UDOH, Shigeki MATSUYA, Kunio ISHIKAWA  
Kyushu Univ

**B-06** Real–time Monitoring of Corrosion Rate for Metallic Implant Materials

○ Kazuhiko ENDO, Hiroki OHNO, Isao KAWASHIMA, Yuro YAMANE  
Health Sciences Univ of Hokkaido

**B-07** Apatite coating titanium mesh using hydrothermal–electrochemical method

○ Kagoshima Univ

**B-08** Development of open pore bioceramics by hydroxyapatite

○ Koh–ichi UDOH, Melvin MUNAR, Masaharu NAKAGAWA, Shigeki MATSUYA, Kunio ISHIKAWA  
Kyushu univ Faculty Dent Sci, Sec Biomat Eng

**B-09** Hydrolysis of calcite in potassium phosphate solution

○ Shigeki MATSUYA, Koh–ichi UDOH, Masaharu NAKAGAWA, Kunio ISHIKAWA  
Kyushu Univ

**B-10** Measurement of fluorid release from a fluoride–releasing resin cement under the different conditions

○ Akira YODA, Syuichi SONODA, Toru NIKAIDO, Junji TAGAMI  
Tokyo Med and Dent Univ

**B-11** Physical property of conventional glass ionomer cement added the spherical filler: Part 1

○ Rosalina TJANDRAWINATA, Masao IRIE, Kazuomi SUZUKI  
Okayama Univ

**B-12** Development of a–TCP/Te–CP cement for pulpotomy

○ Masatoshi TAGAYA, Nobukazu WAKAMATSU, Hideo KAMEMIZU, Mayumi IIZIMA, Masanori ADACHI, Takayasu GOTO, Yasuo TAMURA, Yutaka DOI  
Asahi Univ

**B-13** Trial production of expansive temporary sealing material (Part 3)

○ Shoei SUGASHIMA, Hidetoshi OKADA, Yoshinori ISHIDA, Masaaki SATOH, Katsuya NAGAYAMA  
Ohu Univ School of Dentistry

**B-14** Effects of strontium constituent on the properties of zirconium–containing glasses for

dental porcelains

○Masayuki KON<sup>1</sup>, Masahiro KOBAYASHI<sup>2</sup>, Kenzo ASAOKA<sup>1</sup>

<sup>1</sup>Tokushima Univ, <sup>2</sup>Chiba Inst Tech

**B-15** Spectroscopic research for differentiation of tooth from resin and porcelain

○Kazutoshi TANI, Manabu MORITA, Motohiro UO, Shouzi OHKAWA, Toshi SUGAWARA, Humio WATARI

Hokkaido Univ

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## Hall C

### 10:00-15:00 Poster Presentations

**P-01** The effect of content of plasticizer of heat cured acrylic soft denture liners on bond strength to denture base resin

○Guang HONG, Hiroshi MURATA, Taizo HAMADA

Hiroshima Univ

**P-02** The color change of reinforced denture base resins

○Takahito KANIE, Hiroyuki ARIKAWA, Koichi FUJII, Seiji BAN

Kagoshima Univ

**P-03A** study on resin cements for luting – Effect of the use of air-inhibited films on knock –

○Hiroyasu KUROKAWA, Masashi MIYAZAKI, Akitomo RIKUTA, Susumu ANDO, Hideo ONOSE

Nihon Univ

**P-04** Optical properties of paint type resin for shade modification of crown and bridge resins. Part 1 Light transmittance characteristics

○Hiroyuki ARIKAWA, Takahito KANIE, Koichi FUJII, Seiji BAN

Kagoshima Univ

**P-05** Shape memory alloy fiber reinforced resin matrix smart composite (Part 7) –effects of fiber prestrain–

○Kenichi HAMADA, Fumiaki KAWANO, Kenzo ASAOKA

Tokushima Univ

**P-06** Characteristics of a new denture relining material HR-100

○Kenji HATANAKA, Kyouko HUKUNISHI

Kuraray Medical Inc

**P-07** Influence of the content of plasticizer and cross-linking agent of heat-cured acrylic soft denture liners on their dynamic viscoelasticity

○Hiroshi MURATA, Guang HONG, Taizo HAMADA, Norihiro TAGUCHI, Mayumi KAWAMURA, Yasushi NARASAKI, Hironori CHIMORI

Hiroshima Univ

**P-08** Functional polymer for dental use (part 3) Polymerization reactivity of novel monomers

○Shigeaki KURATA, Kumiko MORISHITA, Kozo UMEMOTO

Kanagawa Dental College

**P-09** Physical properties of MFR hybrid composite resin, SOLARE

○Hideki YARIMIZU, Tetsuro SAKUMA, Shoji AKAHANE, Kazuo HIROTA

GC Corporation

**P-10** Effect of boiling water immersion on mechanical properties of composite resin for core construction

○Atsushi HARASHIMA, Takahiro NAKA, Akiisa MORIYAMA, Kenichi KURAMOCHI, Taniichiro

YAMAGA, Yasushi HIBINO, Hiroshi NAKAJIMA  
Meikai Univ

P-11A study of the new single-step self-etching adhesive

○Linlin HAN, Masayoshi FUKUSHIMA, Akira OKAMOTO, Masaaki IWAKU  
Niigata Univ

P-12A study on resin composites for core built-up –Effect of curing mode on bond strength to dentin–

○Satoshi OOOKA, Keisi TUBOTA, Keisuke IWASAKI, Masashi MIYAZAKI, Susumu ANDO, Hideo ONOSE  
Nihon Univ

P-13Self-etching primer comprised of amide monomer (Part 2)–Hydrolytic stability of methacrylamide–

○Hiroki YOSHIDA, Norihiro NISHIYAMA, kimiya NEMOTO  
Nihon Univ Sch of Dentistry at Matsudo

P-14Electrodeposition of adhesive monomer on dental metal –Adhesion between electrodeposited metal with 4-META and methacrylate resin –

○Kotoyo ENOMOTO, Masahiro KAKETANI, Taishi KOJIMA, Youichi ISHIKAWA, Hisaji KIKUCHI, Takayoshi IGARASHI, Minoru NISHIYAMA  
Nihon Univ

P-15Adhesion of resin to precious metal alloys using sulfur-containing adhesion promoting monomer for precious metals

○Yoshinori KADOMA  
Tokyo Med and Dent Univ

P-16Bonding efficacy of resin cement system employed wet-bonding technique

○Junichi DOI, Rie HIKASA, Satoshi NAKABO, Yoshihiro NISHITANI, Kousuke ITOU, Yasuhiro TORII, Masahiro YOSHIYAMA  
Okayama Univ

P-17Modification effect of benzen group silane coupling agents contained double bond (Part 4) –Tensile bond strength and coupling effect of hydrolysis groups–

○Tomotaro NIHEI  
Kanagawa Dental College

P-18Deproteinized effects on resin-tooth bond structures

○Eiji YOSHIDA, Masanori HASHIMOTO, Masayuki KAGA, Hidehiko SANO, Haruhisa OGUCHI  
Hokkaido Univ Graduate School of Dental Medicine

P-19Influence of the bonding of resin luting cement to dental alloys treated by newly developed plasma equipment

○Akihiro FUJISHIMA, Fumiko HIROSHIMA, Satoshi MAEHARA, Toshiko INOUE, Takashi MIYAZAKI  
Showa Univ School of Dentistry

P-20Bonding durability of orthodontic brackets utilized mechanical interlocking

○Shigeru TANAKA, Yoshima ARAKI, Hiroyuki MIURA  
Iwate Medical Univ

P-21Disinfection of impressions in dental treatment for elderly patients at home –Effect of spraying with disinfectant solutions and storing of alginate impressions on the dimensional accuracy and deformation of stone models–

○Hisako HIRAGUCHI, Hisami NAKAGAWA, Hirobumi UCHIDA, Naoki TANABE  
Nihon Univ

P-22Improvement of stone-surfaces obtained from combined agar/alginate impressions of

glass polyalkenoate lining cement

○ Hirobumi UCHIDA, Hisami NAKAGAWA, Hisako HIRAGUCHI, Naoki TANABE  
Nihon Univ

P-23 Effect of impressions immersed in NaOCl solution with the additive on surface properties of the stone models

○ Naoki TANABE, Hirobumi UCHIDA, Hisami NAKAGAWA, Hisako HIRAGUCHI  
Nihon Univ

P-24 Influence of adjacent teeth and adhesive strength on the accuracy of three-dimensional measurements for die obtained from agar-alginate combined impressions

○ Hiroshi NOGUCHI, Yoshinori ISHIDA, Ikuo SUZUKI, Hidetoshi OKADA, Katsuya NAGAYAMA  
Ohu Univ School of Dentistry

P-25 Osteoblast invasion into carbonated apatite-collagen sponges

○ Manabu ITOH<sup>1</sup>, Atushi SHIMAZU<sup>1</sup>, Isao HIRATA<sup>1</sup>, Yasuhiro YOSHIDA<sup>2</sup>, Masayuki OKAZAKI<sup>1</sup>, Hideaki SHINTANI<sup>1</sup>

<sup>1</sup>Hiroshima Univ Graduate School of Biomedical Sciences, <sup>2</sup>Okayama Univ Graduate School of medicine and Dentistry

P-26 An evaluation of bone formation by micro-focus CT

○ Yasumasa FUKASE<sup>1,2</sup>, Kenji YAGIHARA<sup>1</sup>, Kiyomi MIYAZAKI<sup>1</sup>, Terumasa KANEDA, Norihito HAGINO<sup>1</sup>, Tomoko KUROTANI<sup>1</sup>, Minoru NISHIYAMA<sup>1,2</sup>

<sup>1</sup>Nihon Univ School of Dent, <sup>2</sup>Dent Res Center, Nihon Univ School of Dent

P-27 Imparting storage/release functions to a cross-linked polymer -Permeability through a collagen-like cross-linked polymer-

○ Takashi NEZU, Tomohiro MORIKAWA, Kyosuke FUKUDA, Hatsumi NAGADOME, Yoshihiro TERADA

Kyushu Univ

P-28 Development of Bio-Functional Material in vivo

○ Tatsushi KAWAI<sup>1,2</sup>, Takashi KUNII<sup>1</sup>, Tatsuhide HAYASHI<sup>1</sup>, Takashi ITO<sup>1</sup>, Tomoo SUZUKI<sup>1</sup>, Hironobu TANIKAWA<sup>1</sup>, Hideki KAWAI<sup>1</sup>, Hiroshi MURAKAMI<sup>1,2</sup>

<sup>1</sup>School of Dentistry Aichi-gakuin Univ, <sup>2</sup>Research Institute of Advanced Oral Science

P-29 Surface texture of dental implant part 1: Surface texture of some commercial implants

○ Kouichi WATANABE, Seigo OKAWA, Mitsugu KANATANI, Syuji NAKANO, Osamu MIYAKAWA, Masayoshi KOBAYASHI, Akihiko HASHIMOTO

Niigata Univ

P-30 Surface modification and cell response of injection molded poly(L-lactide) plates by means of plasma treatment

○ Masafumi NAKAGAWA, Fumio TERAOKA, Yoshinosuke HAMADA, Junzo TAKAHASHI  
Osaka Univ

P-31 Effect of surface treatment on the bioactivity of the dental titanium alloys

○ Lei ZHANG, Masaharu NAKAGAWA, Koh-ichi UDOH, Shigeki MATSUYA, Kunio ISHIKAWA  
Kyushu Univ

P-32 Protein adsorption onto organic thin films deposited by plasma polymerization

○ Tohru HAYAKAWA<sup>1</sup>, Masao YOSHINARI<sup>2</sup>, Kimiya NEMOTO<sup>1</sup>

<sup>1</sup>Nihon Univ at Matsudo, <sup>2</sup>Tokyo Dental College

P-33 Changes of polycarbonate and leaching of bisphenol A after storage in water for 30 years

○ Mariko WATANABE  
Tokyo Med and Dent Univ

**P-34** Abrasion at margin of crown restorations –Grinding cusp test–

○ Kazunori OTANI, Hiroyasu KOIZUMI, Masahiro SAITOH, Youji SIOTA, Kazue FURUHASHI, Yosiyuki KAKEHASHI, Takayoshi IGARASHI, Minoru NISHIYAMA  
Nihon Univ

**P-35** In vitro embryotoxicity testing of five indium compounds by differentiation of embryonic stem cells

○ Koichi IMAI<sup>1</sup>, Horst SPIELMANN<sup>2</sup>, Akihiro UEDA<sup>1</sup>, Masaaki NAKAMURA<sup>1</sup>  
<sup>1</sup>Osaka Dental Univ, <sup>2</sup>Zebet at BgVV, Germany

**P-36** The effects of particulate metals on osteoblast-like cells in vitro

○ Shuhe KURODA, Shoji TAKEDA, Masaaki NAKAMURA  
Osaka Dental Univ

**P-37** Cytotoxic effects of and fluoride release from glass-ionomer cement containing short glass fibers

○ Masayuki KAGA<sup>1</sup>, Eiji YOSHIDA<sup>1</sup>, Masahiro KOBAYASHI<sup>2</sup>, Shoji OKAWA<sup>1</sup>, Masayuki KON<sup>3</sup>, Haruhisa OGUCHI<sup>1</sup>  
<sup>1</sup>Hokkaido Univ Graduate School of Dental Medicine, <sup>2</sup>Chiba Institute of Technology, <sup>3</sup>School of Dentistry, Tokushima Univ

## Saturday, April 19th

### Hall A

#### 15:30–16:45 Oral Presentations

**A-16** Application of laser welding for titanium and dental precious alloys

○ Keiji IWASAKI, Shoji OHKAWA, Motohiro UO, Tukasa AKASAKA, Toshi SUGAWARA, Fumio WATARI  
Hokkaido Univ

**A-17** Laser welding with filler wire (Part 1) Joint strength of laser-welde CO-Cr alloy with filler wire

○ Toshihiro TOGAYA<sup>1</sup>, Kenji KITAMI<sup>2</sup>  
<sup>1</sup>Kyoto Univ, <sup>2</sup>AI Dent Lab

**A-18** Morphological and spectroscopical analysis of cavities formed by Nd:YAG, Er:YAG and CO<sub>2</sub> lasers

○ Magda Kiyoko YAMADA, Motohiro UO, Shoji OHKAWA, Tukasa AKASAKA, Fumio WATARI  
Hokkaido Univ

**A-19** Measuring methods of fracture toughness on a dental castable ceramic by IM method

○ Satoshi MAEHARA, Akihiro FUJISHIMA, Yasuhiro HOTTA, Takashi MIYAZAKI  
Showa Univ School of Dentistry

**A-20** Development of small ozone air cleaner for bacteria elimination and deodorization

○ Koichi ARAI  
Meikai Univ

## Hall B

### 15:30–16:45 Oral Presentations

**B-16**Improvement of dental resins in properties (Part 6) – Specific behavior of UDMA/acidic monomer resins on the polymerization shrinkage –

○Jiro TANAKA, Shinjiro CHUJO, Kazuomi SUZUKI  
Okayama Univ

**B-17**Improvement of Dental Resins in Properties (Part 7) – Optimum composition of MAA in UDMA/MAA resin matrix for compomer and its F<sup>-</sup> ion release –

○Toshiaki HASHIMOTO, Jiro TANAKA, Kazuomi SUZUKI  
Okayama Univ

**B-18**Characterization of resin initiators–Diphenylpicrylhydrazyl, Galvinoxyl method–

○Seiichiro FUJISAWA<sup>1</sup>, Toshiko ATSUMI<sup>1</sup>, Yoshinori KADOMA<sup>2</sup>  
<sup>1</sup>Meikai Univ Sch of Dentistry, <sup>2</sup>Tokyo Med and Dent Univ

**B-19**Rheological property of relining material based on ethyl methacrylate

○Yuji SAITO  
Tokyo Med and Dent Univ

**B-20**Measurement of the penetration of various resin monomers in teeth

○Naoko KAMISHIMA, Noboru OOHATA, Fumio WATARI, Motohiro UO, Syouji OOKAWA, Tsukasa AKASAKA, Tosi SUGWARA  
Hokkaido Univ

## Hall C

### 10:00–15:00Poster Presentations

**P-38**Effect of toothbrushing on surface structure of titanium in acidic environment

○Awlad HOSSAIN, Seigo OKAWA, Syuji NAKANO, Masayoshi KOBAYASHI, Osamu MIYAKAWA  
Niigata Univ

**P-39**Chemical mechanical polishing of titanium – Effects of slurry with an oxidizing agent on the polished surface –

○Seigo OKAWA, Syuji NAKANO, Kouichi WATANABE, Mitsugu KANATANI, Hossain AWLAD, Osamu MIYAKAWA, Masayoshi KOBAYASHI  
Niigata Univ

**P-40**Improvement in mechanical properties of titanium–copper alloys for dental casting – Effect of heat treatment on chromium containing alloy–

○Masayuki HATTORI, Koji HASEGAWA, Masao YOSHINARI, Eiji KAWADA, Yutaka ODA  
Tokyo Dental College

**P-41**Castability in Ti–Zr–Sn alloys

○Toshiaki OGATA, Yasuhiro TANAKA, Eri MIURA, Takanobu SHIRAISHI, Kunihiro HISATSUNE  
Nagasaki Univ

**P-42**Machinable titanium developed spark plasma sintering technique Part 1 Condition of spark plasma sintering and mechanical properties

○Kimiya NEMOTO<sup>1</sup>, Osamu OKUNO<sup>2</sup>, Norihiro NISHIYAMA<sup>1</sup>, Munemoto KASHIMA<sup>1</sup>  
<sup>1</sup>Nihon Univ School of Dentistry at Matsudo, <sup>2</sup>School of Dentistry, Tohoku Univ



P-43 Effect of titanium and titanium alloy surface treatment with titanate coupling agent on bond strength of thermosetting facing resin to titanium and titanium alloy

○ Hirofumi KATSURA, Tsuneo FUKUOKA, Yoshima ARAKI  
Iwate Medical Univ

P-44 Fabrication of sintered products of titanium using a PAS method (part 7) – Fatigue of porous titanium sintered body with palladium as activator –

○ Won Sik LEE, Shigeyuki TAKASHIBA, Takashi MIYAZAKI  
Showa Univ School of Dentistry

P-45 Fatigue property of Ti-Ni alloy dental castings

○ Jumpei KASUGA, Takayuki YONEYAMA, Hisashi DOI, Equo KOBAYASHI, Osamu FUKUSHIMA, Hitoshi HAMANAKA  
Tokyo Med and Dent Univ

P-46 Effects of dynamic extraction of three kinds of precious alloys on dissolution and cell viability

○ Hisanobu TERASHIMA, Shoji TAKEDA, Masaaki NAKAMURA  
Osaka Dental Univ

P-47 Effect of chemical and heat treatment on sulfuration of Ag-Pd-Au-Cu based alloy – Effect on castings –

○ Setsuo SAITOH, Masayuki TAIRA, Ryuichi KON, Tsuneo FUKUOKA, Yoshima ARAKI  
Iwate Medical Univ

P-48 Tarnish resistance and electrochemical properties of Ag-Au-Pd-Cu system alloys

○ Takaichi YOSHIDA, Taira MIYASAKA, Hiroyuki OKAMURA  
Nippon Dental Univ

P-49 Experimental investment without binder materials

○ Yukimichi TAMAKI, Zutai ZHANG, Shigeyuki TAKASHIBA, Yuichiro OKAZAKI, Yasuhiro HOTTA, Takashi MIYAZAKI  
Showa Univ

P-50 Casting ring liners XIII – Cushioning effect of wet casting ring liners on the setting expansion of investment materials in casting ring –

○ Michiaki SASAO, Hideharu HIROSE, Kenji TAKAOKA, Nobuyuki USUI, Kazunori SHIMOMURA, Misaki ANZAI, Minoru NISHIYAMA  
Nihon Univ

P-51 Corrosion of dental alloys in various types of electrolyzed waters

○ Hongwei DONG, Yuki NAGAMATSU, Kyoshi TAJIMA, Ker-kong CHEN, Hiroshi KAKIGAWA, Yoshio KOZONO  
Kyushu Dental College

P-52 Fracture of Ni-Ti superelastic alloy in sodium hypochlorite solution

○ Ken'ichi YOKOYAMA, Kazuyuki KANEKO, Kenzo ASAOKA  
Tokushima Univ

P-53 Three dimensional interconnected pore scaffold as bone defect filler

○ Melvin MUNAR, Koh-ichi UDOH, Masaharu NAKAGAWA, Shigeki MATSUYA, Kunio ISHIKAWA  
Kyushu Univ, Faculty Dent Sci, Sec Biomat Eng

P-54 Hardening by carbonization of calcium hydroxyde compact

○ Xin LIN, Shigeki MATSUYA, Koh-ichi UDOH, Masaharu NAKAGAWA, Kunio ISHIKAWA  
Kyushu Univ

P-55 Physical property of commercial resin modified glass ionomer cement: effect of the spherical filler

○ Masao IRIE, Rosalina TJANDRAWINATA, Kazuomi SUZUKI  
Okayama Univ

P-56 Effects of calcium oxide and phosphoric acid to expansion of dental stone (Part 3) The concentration of phosphoric acid

○ Mikiko YAMADA<sup>1</sup>, Kumiko MORISHITA<sup>1</sup>, Shigeaki KURATA<sup>1</sup>, Kozo UMEMOTO<sup>1</sup>, Kazuhiko JOSHIN<sup>2</sup>

<sup>1</sup>Kanagawa Dental College, <sup>2</sup>Takatsuki-shi

P-57 Studies on fitness of dental casting alloys with quick heating phosphate-bonded investments. Part 1. Comparison with conventional type

○ Yuuki MATSUYAMA, Akihiro KUROIWA, Go UDA, Takashi MINEMURA, Akira SUZUKI, Yuugi SEKIGUTI, Mitsuo SAKOU, Takehiko KAIDA, shigeo YOSIDA, Yoshimasa IGARASHI, Mitio ITO  
Matsumoto Dental Univ

P-58 Setting expansion pressure of dental stone by direct measurement

○ Mitsugu KANATANI, Syuji NAKANO, Seigo OKAWA, Kouichi WATANABE, Osamu MIYAKAWA, Noriyasu HOTTA  
Niigata Univ

P-59 The setting behavior of the various gypsum products in dentistry

○ Isao KAWASHIMA, Hiroki OHNO, Kazuhiko ENDO, Yuro YAMANE  
Health Sciences Univ of Hokkaido

P-60 Strength of recent dental ceramics

○ Jingyue JIN, Yujin AOYAGI, Naohiko IWASAKI, Hidekazu TAKAHASHI  
Tokyo Med and Dent Univ

P-61 Stress analysis of ADS implant using finite element method II

○ Michitoshi ARIMOTO<sup>1</sup>, Yshihiro TAKI<sup>2</sup>, Yoshifumi TAKAHASHI<sup>1</sup>, Bunkichi AZUMA<sup>1</sup>, Koushin SHINODA<sup>1</sup>, Tatsushi KAWAI<sup>1</sup>

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P-62 Dynamic analysis of IMZ implant system by the finite element method

○ Yasuhiro TANIMOTO, tohru HAYAKAWA, Hideki TESHIMA, Kimiya NEMOTO  
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P-63 Process of fracture in dental ceramics subjected to occlusal load. Part II, Effect of thickness of resin cement on the stress distribution in all-ceramics crowns subjected to occlusal pressure

○ Nobukazu WAKAMATSU, Hideo KAMEMIZU, Mayumi IJIMA, Takashi HORIGUCHI, Masanori ADACHI, Takayasu GOTO, Yuyaka DOI  
Asahi univ

P-64 Direct oral shape measurement by optical impression (Part 2) -Modification of measurement method and clinical application-

○ Tetsuya KOJIMA<sup>1</sup>, Taiji SOHMURA<sup>1</sup>, Mitsumasa NAGAO<sup>1</sup>, Kazumichi WAKABAYASHI<sup>1</sup>, Soichiro KINUTA<sup>1</sup>, Hirokazu HOJO<sup>2</sup>, Takashi NAKAMURA<sup>1</sup>, Junzo TAKAHASHI<sup>2</sup>

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P-65 Automatic fabrication of prostheses using a CAD/CAM system (Part 21) Analysis of stone die by new digitizing system

○ Yasuhiro HOTTA, Atsushi OZAWA, Toshihisa FUJIWARA, Takashi MIYAZAKI, Masashi SATOU, Ryuji SASA

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P-66 Models to use for root canal debridement

○ Kazuo OHKUMA  
The Nippon Dental Univ

**P-67 Laser surface modification of porous titanium plate produced by sintering**

○ Shozo TSURUTA, Tatsuya HIKOSAKA, Toshiki ITOH, Kentaro KAIKAWA, Masashi TOYAMA, Yoshiro IIDA, Tatsushi KAWAI  
Aichi-Gakuin Univ

**P-68 Laser welding in mouth Part 3 Application of laser welding for crown bridge**

○ Isao SHIBUYA, Yasuhiro TANIMOTO, Norihiro NISHIYAMA, Mitsuru NOMURA, Mitsuru NOMURA  
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**P-69 Development of TiO<sub>2</sub> photocatalyst for dental resin**

○ Toru NONAMI, Kunio FUNAKOSI, Takayuki KUKMAGAI, Hiroko HASE  
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**P-70 Application of thermography in dentistry**

○ Manabu KOMORIYAMA, Rie NOMOTO, Rin TANAKA, Noriyasu HOSOYA, Kazuhiro GOMI, Fumiaki IINO, Yasuko TAKAYAMA, Masahiko TSURUTA, Kenzo KAWASAKI, Takashi ARAI, Toshio HOSOI, Ayao HIRASHITA, Susumu HIRANO  
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**P-71 Apatite-collagen complexes 1 Relation between immersion time and content of apatite**

○ Satoshi KAWANO, Yasumitsu AKITA, Takakazu YOSHIDA, Yutaka DOI, Ichiro SEKINE  
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**P-72 Develop of temporary luting agent**

○ Hidetoshi OKADA, Shouei SUGASHIMA, Mitsunori KANAMARU, Takumi HOSHINO, Hitoshi OIKAWA, Katsuya NAGAYAMA  
Ohu Univ School of Dentistry

**P-73 Three-dimensional measurement of dental cast using X-ray CT**

○ Kazumichi WAKABAYASHI<sup>1</sup>, Taiji SOHMURA<sup>1</sup>, Kyoko MATSUMURA<sup>1</sup>, Hideyuki OKU<sup>2</sup>, Takashi NAKAMURA<sup>1</sup>, Junzo TAKAHASHI<sup>1</sup>  
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**P-74 A new method to remove metal artifact of 3D-CT image**

○ Mitsumasa NAGAO<sup>1</sup>, Taiji SOHMURA<sup>1</sup>, Kazumitsu WAKABAYASHI<sup>1</sup>, Kyouko MATSUMURA<sup>1</sup>, Hirokazu HOUJOU<sup>2</sup>, Hideyuki OKU<sup>3</sup>, Takashi NAKAMURA<sup>1</sup>, Junzou TAKAHASHI<sup>1</sup>  
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**P-75 Repairing of acrylic denture base and artificial tooth using adhesive resin: Bonding between ceramic tooth and acrylic resin**

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