# The 54th General Session of the Japanese Society for Dental Materials and Devices (JSDMD)

**October 1 (Thursday) - 2 (Friday), 2009**  
Kagoshima Public Access Center (Kagoshima Prefectural Citizen's Exchange Center)  
14-50 Yamashita-cho, Kagoshima 892-0816, JAPAN

**October 1 (Thursday)**  
**Hall A**  
8:55-9:00 Opening Remark  
9:00-11:00 General Presentation (Oral Session)  
[**Metal and Corrosion**]

**A-1** Microstructure change in commercial dental Ag-Pd-Cu-Au alloy induced via re melting  
OFukui Hisao¹, Niinomi Mitsuo², Akahori Toshikazu², Tsuruta Shozo¹, Nakai Masaaki², Tsutsumi Harumi²  
¹Aichi-Gakuin Univ., ²IMR, Tohoku Univ.

**A-2** Microstructure and mechanical properties of high-Cr and high-N contained Ni-free Co-Cr-Mo alloys for dental casting  
ONomura Naoyuki¹, Doi Hisashi¹, Tutsumi Yusuke¹, Oya Kei¹, Hanawa Takao¹, Chia Akihiko²  
¹Tokyo Medical and Dental Univ., ²Tohoku Univ.

**A-3** Application to telescopic dentures of Co-Cr alloys - Evaluation of static frictional coefficients in dental alloys  
OOhida Masahito, Yoda Keita, Nomura Naoyuki, Hanawa Takao, Igarashi Yoshimasa  
Tokyo Medical and Dental Univ.

**A-4** Galvanic corrosion of orthodontic wires brazed with silver solder  
OTakada Yukyo, Takahashi Masatoshi, Kikuchi Masafumi  
Tohoku Univ.

**A-5** Corrosion behavior of Zr-based bulk glassy alloy in simulated body fluid  
OTsutsumi Yusuke, Doi Hisashi, Nomura Naoyuki, Hanawa Takao  
Tokyo Medical and Dental Univ.

[**Titanium and Titanium Alloy**]

**A-6** Evaluation of titanium fabricated by electron beam melting system for dental applications  
OKoike Marie, Okabe Toru  
Baylor College of Dentistry

**A-7** Corrosion behaviors of titanium in the hydrogen peroxide containing solution under acidic or alkaline conditions  
OTakemoto Shinji, Hattori Masayuki, Ichikawa Hiromichi, Igarashi Toshio, Noguchi Tatsumi, Yoshida Hidetaka, Yoshinari Masao, Kawada Eiji, Oda Yutaka  
Tokyo Dental College

**A-8** Mechanical properties of Ni-Ti alloy wires after direct electric heat treatment  
OEbihara Yasuhiro, Otsubo Kunihiko  
Otsubo Orthodontic Clinic

**A-9** Fabrication of osteoconductive titanium by ozone treatment  
OSakaguchi Mami¹, Kawachi Giichiro¹, Maruta Michito¹, Tsuru Kanji¹, Matsuya Shigeki², Koyano Kiyoshi¹, Ishikawa Kunio¹  
¹Kyushu Univ., ²Fukuoka Dental College

**A-10** Direct synthesis and biocompatibility of titania nanotube layers on metal substrates for implant biomaterial  
ONishida Hisataka¹, Egusa Hiroshi², Nakamura Takashi², Yamamoto Kazuyo¹, Yatani Hirofumi²
October 1 (Thursday)
Hall A
13:00-14:12 General Presentation (Oral Session)
[Adhesion]

A-11 New adhesion theory -Curing behaviour and fracture mechanism-
OWakasa Kunio¹, Uno Shigeru², Okazaki Masayuki¹
¹Hiroshima Univ., ²Toranomon Hospital

A-12 Effect of heat air-blowing of adhesives on dentin bond strengths of single-step self-etch adhesive systems
OTsuchiya Hiroaki¹, Tsujimoto Akimasa¹, Uekusa Satoshi¹, Yoshida Takeshi¹, Ando Susumu¹,
Hirohata Naoshi², Miyazaki Masashi¹
¹Hirohata Naoshi², Miyazaki Masashi¹
¹Nihon Univ. Sch. of Dentistry, ²Tanaka Dental Clinic

A-13 The relationship between water sorption and mechanical property of self-etch adhesives
OHosaka Keiichi, Nakajima Masatoshi, Takahashi Masahiro, Komada Wataru, Otake Shiho, Miura
Hiroyuki, Ikeda Masaoimi, Sakano Wakae, Tagami Junji
Tokyo Medical and Dental Univ.,

A-14 Dentin microtensile bond strengths and acid-base resistant zone observation in three MMA-based resin cements
OHamid Nurrohman¹, Takagaki Tomohiro¹, Kanchana Waidyasekera¹, Nikaido Toru¹, Tagami
Junji¹, ²
¹Tokyo Medical and Dental Univ., ²Global Center for Excellence Program; International Research
Center for Molecular Science in Tooth and Bone Diseases, at TMDU

A-15 Effect of curing modes of dual-cured core systems on microtensile bond strength to dentin and
formation of acid-base resistant zone
OLi Na¹, Takagaki Tomohiro¹, Kanchana Waidyasekera¹, Ikeda Masaomi¹, Nikaido Toru¹, Tagami
Junji²
¹Tokyo Medical and Dental Univ., ²Global Center for Excellence Program; International Research
Center for Molecular Science in Tooth and Bone Diseases, at TMDU

A-16 A research of the technique-sensitivity of recent adhesive systems and the improvement of
operators' bond performance
OKakuda Shinichi, Fu J, Tanaka T, Sano H
Hokkaido Univ.

Hall A
14:20-15:50 [An Open Symposium and Special Seminar 1 for Dental Materials Adviser / Senior Adviser]

Specification for dental materials and devices -Point of ISO standards-
1. Current status and change of ISO/TC106
Ogura Hideo
Department of Dental Materials Science, Sch. of Life Dentistry at Niigata, The Nippon Dental Univ.

2. Dentistry -Metallic materials-
Oda Yutaka
Department of Dental Material Science, Tokyo Dental College

3. Standards for ceramics, composite resins, and denture-base polymers
Takahashi Hidekazu
Advanced Biomaterials, Graduate Sch. of Medical and Dental Sciences, Tokyo Medical and Dental
Univ.

4. ISO standards of dental implant systems and biological evaluation for dental materials
Kawai Tatsushi
16:00-17:00 [Special Lecture]

From Tatewaki KOMATSU to Ryoma SAKAMOTO 〜World of NHK history drama〜

Haraguchi Izumi
Department of Law and Literature, Kagoshima Univ.

October 1 (Thursday)
Hall B
9:30-15:00 General Presentation (Poster Session) (11:00-12:00 Discussion)
[Award Challenge Posters P-1 - P-12]

P-1 Immobilization of antimicrobial agent on the surface of denture acrylcs
OTakayama Yukihiro, Takamoto Yuko, Ishii Hitomi, Okura Emi, Nikawa Hiroki, Makihira Seicho
Hiroshima Univ.

P-2 Experimental study of long term observation of the ectopic bone induced By Part-purified BMP
OSato Yamato, Hamazima Soichiro, Asakura Masaki, Abe Akiko, Hayashi Tatsuhide, Kawai Tatsushi
Aichi-Gakuin Univ.

P-3 Application of gel material for controlling the branching morphogenesis of mouse submandibular gland
OMiyajima Hiroyuki, Matsumoto Takuya, Sohmura Taiji
Osaka Univ.

P-4 The effects of colloidal platinum nanoparticles and colloidal gold nanoparticles on resin dentin adhesion using 4-META MMA-TBB
ONagano Futami, Endo Kazuhiko, Hashimoto Masanori, Sano Hidehiko, Hoshuka Shuhei, Ohno Hiroki
Hokkaido Univ.

P-5 Development of the methacryl amide self-etching primer with greater dentin bond durability
OMa Shen, Fujita Kou, Tanimoto Yasuhiro, Takahashi Haruyoshi, Ikemi Takuji, Nishiyama Norihiro
Nihon Univ. Sch. of Dentistry at Matsudo

P-6 Application of flake shaped glass filler containing polycarbonate for non-clasp partial denture
OSasaki Akiko¹, Uo Motohiro¹, Iwasaki Keiji², Abe Shigeaki¹, Akasaka Tsukasa¹, Watari Fumio¹
¹Hokkaido Univ., ²Hokkaido dental technical college

P-7 Effects of surface textures for adhesion of Candida species on PMMA resin
OYamaguchi Nobuaki, Mayahara Mitsuori, Kataoka Ryuta, Tamaki Yukimichi, Fujishima Akihiro,
Miyazaki Takashi
Sch. of Dentistry, Showa Univ.

P-8 Corrosion resistance evaluation of Pd-free precious dental alloys by potentiodynamic polarization measurements and microstructure observation
OFujita Takeshi, Shiraishi Takanobu, Takuma Yasuko, Hisatsune Kunihiro
Nagasaki Univ.

P-9 Difference in gene expression in bone differentiation of MC3T3-E1 cells on metals
OOya Kei, Tsutsumi Yusuke, Doi Hisashi, Nomura Naoyuki, Hanawa Takao
Tokyo Medical and Dental Univ.

P-10 Spontaneous formation of calcium phosphate on experimental Ti-Ag alloy surfaces in simulated body fluid
OTakahashi Masatoshi, Kikuchi Masafumi, Hatori Kouki, Sasaki Keiichi, Takada Yukyo
Tohoku Univ.

P-11 Natural decrease of chemical property and biological response of titanium over time
OHori Norio, Kimoto Katsuhiro
**P-12** Effect of amino acids on Zn release from Zn-incorporated octacalcium phosphate and hydroxyapatite

O Honda Yoshitomo, Anada Takahisa, Suzuki Osamu

Tohoku Univ.

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**P-13** Wettability of hydrophilic vinyl polysiloxane impression materials on bovine dentine

O Yamaga Taniichirou, Awata Satoshi, Nagasawa Yuuko, Hibino Yasushi, Nakajima Hiroshi

Meikai Univ.

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**P-14** Influence of various factor on fatigue strength of resin composite composed of three types of filler

O Toyama Tatsuya\(^1\), Nishikawa Izuru\(^2\), Takahashi Hidekazu\(^3\)

\(^1\)Graduate Sch. of Osaka Institute of Tecnology, \(^2\)Osaka Institute of Tecnology, \(^3\)Tokyo Medical and Dental Univ.

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**P-15** Mechanical properties of various latest resin composites

O Yamase Masaru, Maseki Toshio, Nitta Toshihiko, Kimishima Tetsu, Nara Yoichiro, Katsuumi Ichiro

The Nippon Dental Univ.

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**P-16** Development of denture coating materials including S-PRG filler

O Uematsu Shinsuke, Miyao Motonobu

Asahi Univ.

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**P-17** Effect of water immersion on bending strength of fiber reinforced hybrid composite resin using the stationary and dynamic test

O Kuroda Soichi\(^1\), Shimizu Kenichi\(^2\), Kishida Sachie\(^1\), Lin Jie\(^1\), Hasegawa Aki\(^1\), Hatta Minor\(^1\), Yokoyama Daiichiro\(^1\), Shinya Akikazu\(^1\), Gomi Harunori\(^1\), Shinya Aiyoshi\(^1\)

\(^1\)The Nippon Dental Univ. at Tokyo, \(^2\)Shinjyuku Sumitomo Clinic center

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**P-18** Development of new hybrid resin for crown (Part1) Fundamental properties

O Kato Takahiro, Hoshikawa Takeshi

Yamamoto Precious Metal Co., Ltd.

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**P-19** Development of new hybrid resin for crown (Part2) Fatigue strength

O Sato Yuji, Kato Takahiro, Hoshikawa Takeshi

Yamamoto Precious Metal Co., Ltd.

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**P-20** Development of new hybrid resin for crown (Part3) Properties of opaque resin

O Sumida Masashi, Kato Takahiro, Hoshikawa Takeshi

Yamamoto Precious Metal Co., Ltd.

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**P-21** Effect of coating agent for color change of resin-modified glass ionomer cements

O Ando Susumu\(^1\), Oto Tatsuki\(^1\), Oooka Satoshi\(^1\), Kurokawa Hiroyasu\(^1\), Hosoya Yumiko\(^2\), Miyazaki Masashi\(^1\)

\(^1\)Nihon Univ. Sch. of Dentistry, \(^2\)Nagasaki Univ.

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**P-22** Evaluation of a resin cement using newly developed PMMA powder

O Tanoue Naomi\(^1\), Yanagida Hiroaki\(^2\), Sawase Takashi\(^2\)

\(^1\)Nagasaki Univ. Hospital, \(^2\)Nagasaki Univ.

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**P-23** Glass transition point of commercial denture base resins determined by dynamic viscoelastic properties

O Fujii Koichi\(^1\), Minami Hiroyuki\(^2\), Arikawa Hiroyuki\(^1\), Kanie Takahito\(^1\), Ban Seiji\(^1\)

\(^1\)Kagoshima Univ., \(^2\)Kagoshima Univ. Med. & Dent. Hospital

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**P-23** Glass transition point of commercial denture base resins determined by dynamic viscoelastic properties

O Fujii Koichi\(^1\), Minami Hiroyuki\(^2\), Arikawa Hiroyuki\(^1\), Kanie Takahito\(^1\), Ban Seiji\(^1\)

\(^1\)Kagoshima Univ., \(^2\)Kagoshima Univ. Med. & Dent. Hospital
P-24 Bond strength of self-adhesive resin cement to restorative dental metal materials
   OLin Jie¹, Kuroda Souichi¹, Kishida Sachie¹, Sinnya Akihiro¹, Ootaki Erika¹, Harada Kosuke¹,
   Hasegawa Aki¹, Hatta Minor⁰, Yokoyama Daiichiro¹, Shinya Akikazu¹,², Gomi Harunori¹, Shinya
   Akiyoshi¹
   ¹The Nippon Dental Univ. at Tokyo, ²Univ. of Turku

P-25 Evaluation of bonding durability of self-adhesive luting cement, G-Luting, to Zirconia and
   Alumina
   OMinamisawa Hiroto, Sakuma Tetsurou
   GC corporation Research & Development

P-26 Effect of firing temperature on properties of zirconia
   OKono Hiroshi, Okuda Yuji, Noda Makoto, Tsuruki Jiro, Arikawa Hiroyuki, Ban Seiji
   Kagoshima Univ.

P-27 Adhesive properties of newly bonding resin Absolute 3
   OMorimoto Sayako, Nishitani Yoshihiro, Hoshika Tomohiro, Yamaji Kozo, Yoshiyama Masahiro
   Okayama Univ.

P-28 Adhesion to pure gold using a fluorinated adhesive resin
   OKadoma Yoshinori
   Tokyo Medical and Dental Univ.

P-29 Viscoelasticity of the polysaccharide adlayer similar to biofilms: Solidness of
   exopolysaccharides
   ONezu Takashi, Sasaki Kaori, Saitoh Setsuo, Taira Masayuki, Araki Yoshima
   Iwate Medical Univ.

P-30 Effect of demineralization on enamel bond strength of single-step self-etch systems
   ORikuta Akitomo, Tsuchiya Hiroaki, Chiba Yasushi, Tsubota Keishi, Irokawa Atsushi, Miyazaki
   Masashi
   Nihon Univ. Sch. of Dentistry

[Dental Alloy and Titanium Alloy]

P-31 Creep of 12%Au-Ag-Pd alloy at high temperature
   OTsuruta Shojo, Mori Shintaro, Morimoto Keita, Uematsu Yasuaki, Mizuno Masanobu, Tomino
   Masashi, Tsukawaki Atsuya, Fujimoto Koutaro, Kawai Tatsushi
   Aichi-Gakuin Univ.

P-32 MRI-artifact-free alloy for biomedical application (Part 2) -mechanical properties of Au-Pt
   based alloy-
   OUyama Emi, Hamada Kenichi, Asaoka Kenzo
   The Univ. of Tokushima

P-33 Influence of surface roughness of dental alloys for color difference with different immersion
   waters
   OAoki Harumi
   The Nippon Dental Univ. at Tokyo

P-34 The Practical-dental-application of the eutectic mixture alloy containing the Ag-Si (compound)
   -the evaluation for the properties about the color change and the mechanical durability, caused by
   the not exceeding 20% addition of the (each) Au,Pt,Pd to the dental alloy-
   OAoyagi, Yuusuke, Yoshida Takaichi
   The Nippon Dental Univ.

P-35 Behavior of human periodontal ligament cells on chemical modified Ti surface with cell
   adhesive protein
   OKado Takashi, Hidaka Tatsushi, Aita Hideki, Endo Kazuhiko, Furuichi Yasushi
   Univ. of Hokkaido

P-36 Evaluating bond strength between Ti-20Cr-X alloys and porcelain
   OHsu Hsueh-Chuan¹, Kikuchi Hisaji², Kurotani Tomoko², Wu Shih-Ching¹, Ho Wen-Fu³
   ¹Central Taiwan Univ. of Science and Technology, ²Nihon Univ., ³Dayeh Univ.

P-37 Effects of omega phase on properties of dental Ti alloys
[Bioceramics 1]

P-38 Fractographic analyses of zirconia-based all ceramic bridge

Okuda Yuji, Noda Makoto, Tsuruki Jirou, Ban Seiji
Kagoshima Univ.

P-39 Syhntesis of biomimetic macromolecules with an active reaction center analogue of carbonic anhydrase and its application for controlled calcification

Yamatoya Emi¹, Ishida Tomoki¹, Abe Shigeaki¹, Ohguchi Ikuko¹, Akasaka Tsukasa¹, Uo Motohiro¹, Wataru Fumio¹, Hayashi Daisuke², Takada Tomoya²
¹Hokkaido Univ., ²Asahikawa National College of Technology

P-40 Induction of remineralization by resin containing bioglass

Hashimoto Masanori, Nagano Futami, Iijima Masahiro, Endo Kazuhiko, Ohno Hiroki
Health Sciences Univ. of Hokkaido

P-41 Properties of synthesized oxiapatite

Kamemizu Hideo, Komada Yuko, Kanayama Keiichi, Yamaguchi Yusuke, Iijima Mayumi, Wakamastu Nobukazu, Adachi Masanori, Doi Yutaka
Asahi Univ.

P-42 Characteristics of HAp ZrO₂ composite material

Matsumoto Takuya, Matsumoto Takuya, Sohmura Taiji
Osaka Univ.

P-43 Characterization of apatite collagen composites with different apatite content

Kawano Satoshi, Iijima Mayumi, Ito Akihiro, Takenaka Yoshihiro, Takeda Shinpei, Doi Yutaka, Yoshida Takatada
Asahi Univ.

P-44 Study on restriction of initial carious lesion employed diopside ceramics

Yamamoto Shou, Kawasaki Ai, Mashita Akio, Nonami Toru, Hase Hiroko
Chukyo Univ.

P-45 Apatite-like precipitation upon carbon nanotubes with calcifying solutions under various conditions

Koshikawa Takamitsu¹, Kuboki Yoshinori², Abe Shigeaki¹, Akasaka Tsukasa¹, Uo Motohiro¹, Watari Humio¹
¹Hokkaido Univ., ²Proffessor Emeritus, Hokkaido Univ.

[Implant]

P-46 Adhesion of hollow calcium-deficient hydroxyapatite microspheres onto a titanium screw

Kimura Isao, Kanatani Mitsugu
Niigata Univ.

P-47 Bone regeneration using interconnected porous material fabricated from hydroxyapatite collagen membranes

Koyama Yoshihisa¹, Kikuchi Masanori², Takakuda Kazuo¹
¹Tokyo Medical and Dental Univ., ²National Institute for Materials Science

P-48 Characterization of porous alginites scaffolds with various ratio of octacalcium phosphate (OCP) crystal

Shiraishi Naru, Anada Takahisa, Honda Yoshitomo, Masuda Taisuke, Sasaki Keiichi, Suzuki Osamu
Tohoku Univ.

P-49 Chemical deposition of carbonate apatite coatings on Ti substrates with sulfirized SAM

Adachi Masanori, Yamaguchi Yuusuke, Wakamastu Nobukazu, Kamemizu Hideo, Iijima Yutaka, Horiguchi Takashi, Doi Yutaka
Asahi Univ.

P-50 Survival Rate of oral microorganisms on implant materials

Murakami Asuka, Shibata Yo, Miyazaki Takashi
P-51 Development of novel titanium-dextrin composite bone filling material
OSai Takafumi, Hayashi Tatsuhide, Hamajima Soichiro, Asakura Masaki, Mieki Akimichi, Kataoka Hiroyasu, Kawai Tatsushi
Aichi-Gakuin Univ.

P-52 In vivo evaluation of ZrO$_2$ HAp composite scaffold
OAn Sanghyun$^1$, Matsumoto Takuya$^1$, Miyajima Hiroyuki$^1$, Nakahira Astushi$^2$, Sohmuta Taiji$^1$
$^1$Osaka Univ., $^2$Osaka prefecture Univ.

P-53 Proteome analysis of rat serum proteins accumulated onto octacalcium phosphate (OCP) crystals
OKaneko Hirofumi$^1$, Kamei Junichi$^2$, Anada Takahisa$^1$, Honda Yoshihtomo$^1$, Kamakura Shinji$^3$, Terasaki Tetsuya$^4$, Shimauchi Hitotose$^1$, Suzuki Osamu$^1$
Tohoku Univ. Graduate Sch. of Dentistry, $^2$Sch. of Veterinary Medicine, Azabu Univ., $^3$Tohoku Univ., Graduate Sch. of Biomedical Engineering, $^4$Graduate Sch. of Pharmaceutical Sciences, Tohoku Univ.

P-54 Preparation of CNT avidin complex for molecular heating device
Irie Akihito$^{1,2}$, OKawaguchi Minoru$^{1,2}$, Fukushima Tadao$^{1,2}$, Ohno Jun$^{1,2}$, Matsuura Masarou$^1$
$^1$Fukuoka Dental College, $^2$JST, CREST

P-55 Mobility and biocompatibility of DNA-protamine complexes with carbonate apatite
OFukushima Tadao$^1$, Ohno Jun$^1$, Inoue Yusuke$^2$, Kawaguchi Minoru$^1$, Hayakawa Tohru$^3$, Mita Ali
Makoto$^4$, Doi Yutaka$^5$
$^1$Fukuoka Dental College, $^2$Fukuoka College of Health Sciences, $^3$Nihon Univ. at Matsudo, $^4$Maruha Nichiro Holdings, Inc., $^5$Asahi Univ.

P-56 Morphological observation by TEM and copper ion concentration measurements by EDX of macrophage cultured in IC10% copper ions
OTaira Masayuki, Sasaki Kaori, Saihetsu Setsuo, Nezu Takashi, Araki Yoshima
Iwate Medical Univ.

P-57 Development of ceramic bonded to zirconia bridge -Fracture strength of the clinical form-
OKuriyama Soichi, Kunii Jun, Higuchi Daisuke, Goto Daisuke, Tsuda Motoi, Hotta Yasuhiko, Manabe Atsufumi, Miyazaki Takashi
Showa Univ.

P-58 The influence of shrinkage correction and calcination temperature on the adaptability of zirconia crown
OKishida Sachi$^1$, Ootaki Erika$^1$, Shinya Akihiro$^1$, Lin Jie$^1$, Kuroda Soichi$^1$, Hasegawa Aki$^1$, Hatta Minor$^1$, Yokoyama Daiichirou$^1$, Shinya Akikazu$^{1,2}$, Gomi Harunori$^1$, Shinya Akiyoshi$^1$
$^1$The Nippon Dental Univ., $^2$Univ. of Turku

P-59 Surgical navigation system for dental implant using retinal projection head mounted display (Part 1) Development of real-time overlay system
OYamaguchi Satoshi, Ohtani Takafumi, Yatani Hirofumi, Sohmura Taiji
Osaka Univ.

P-60 Dental haptic simulator to train hand skill of student (Part 9) Development of cavity preparation training system and automatic evaluation system
OYoshida Yoshinori$^1$, Yamaguchi Satoshi$^1$, Wakabayashi Kazumichi$^1$, Nagashima Tadashi$^1$, Takeshige Fumio$^1$, Kawamoto Yuusuke$^2$, Noborio Hiroshi$^3$, Sohmura Taiji$^1$
$^1$Osaka Univ., $^2$TGL Inc., $^3$Osaka Elec-Com Univ.

P-61 Dental haptic simulator to train hand skill of student (Part 11) Development and implementation of face model
OYamada Yuya$^1$, Yoshida Yoshinori$^1$, Yamaguchi Satoshi$^1$, Wakabayashi Kazumichi$^1$, Kawamoto
Yusuke\textsuperscript{2}, Nagashima Tadashi\textsuperscript{1}, Takeshige Fumio\textsuperscript{1}, Noborio Hiroshi\textsuperscript{3}, Sohmura Taiji\textsuperscript{1}
\textsuperscript{1}Osaka Univ., \textsuperscript{2}TGL Inc., \textsuperscript{3}Osaka Elec-Com Univ.

P-62 Preparation for ceramic inlay using CAD/CAM system
\textbf{Ohkuma Kazuo, Goto Shin-ichi, Ogura Hideo}
Nippon Dental Univ. Niigata

P-63 Position and pose measurement method of inserted implants using optical tracker (Part 2)
Development of reconstruction software for implants relationship
\textbf{Ono Shinji, Yamaguchi Satoshi, Kusumoto Naoki, Yamada Shinichi, Sohmura Taiji, Yatani Hirofumi}
Osaka Univ.

[Clinical Application 1]

P-64 Evaluation of soft lining materials on function with a questionnaire
\textbf{Kadokawa Akihiko\textsuperscript{1}, Kanie Takahito\textsuperscript{1}, Takenouchi Yasumi\textsuperscript{2}, Minesaki Yoshito\textsuperscript{1}, Ban Seiji\textsuperscript{1}, Onizuka Tadashi\textsuperscript{1}, Tanaka Takuo\textsuperscript{1}}
\textsuperscript{1}Kagoshima Univ., \textsuperscript{2}A dental labo.

P-65 Influence of humidity environments on the shear bond strength of self adhesive cements
\textbf{Okawa Takahisa, Komasa Satoshi, Fujii Takamas, Torii Katunori, Takao Tomonori, Tanaka asahiro, Kawazoe Takayoshi}
Osaka Dental Univ.

P-66 Evaluation of physical properties of commercially available artificial saliva
\textbf{Okura Emi, Ishii Hitomi, Takamoto Yuko, Takayama Yoshihiro, Nikawa Hiroki, Makihira Seicho}
Hiroshima Univ.

P-67 Evaluation of antifungal activity of commercial artificial saliva
\textbf{Ishii Hitomi, Okura Emi, Takamoto Yuko, Takayama Yoshihiro, Nikawa Hiroki, Makihira Seicho}
Hiroshima Univ.

P-68 Biofilm formation of dual or ternary species of Candida
\textbf{Takamoto Yuko, Takayama Yoshihiro, Ishii Hitomi, Okura Emi, Nikawa Hiroki, Makihira Seicho}
Hiroshima Univ.

P-69 Effect of ultraviolet exposure on dynamic viscosity and elasticity of maxillofacial materials
\textbf{Uehara Fumiko\textsuperscript{1}, Mizumachi Wataru\textsuperscript{2}, Nikawa Hiroki\textsuperscript{2}, Makihira Seicho\textsuperscript{2}, Murata Hiroshi\textsuperscript{3}, Mine Yuichi\textsuperscript{2}}
\textsuperscript{1}Hiroshima Univ., \textsuperscript{2}Hiroshima Univ., \textsuperscript{3}Nagasaki Univ.

October 1 (Thursday)
18:00-20:00
Banquet (Royal Garden in Castle Park Hotel)

October 2 (Friday)
Hall A
9:00-11:00 General Presentation (Oral Session)
[Resin and Prevention]
A-17 Sodium phosphorylated chitosan zinc oxide complexes formation and cytotoxicity evaluation for periodontal dressing approach
\textbf{Tachaboonyakiat Wanpen\textsuperscript{1}, Sraakaew Veeranuch\textsuperscript{1}, Ruangsri Prapasri\textsuperscript{2}, Suthin Kanyarat\textsuperscript{3}}
\textsuperscript{1}Chulalongkorn Univ., \textsuperscript{2}Prince of Songkla Univ., \textsuperscript{3}Dentalsea Clinic

A-18 Effect of spherical filler on mechanical properties of composite resin
\textbf{Tamura Yoichi, Kakuta Kiyoshi, Ogura Hideo}
The Nippon Dental Univ. Sch. of Dentistry at Niigata

A-19 Vinyl esters polymer mixture system (Part 8) Potentialities as denture base resin
\textbf{Tanaka Jiro\textsuperscript{1}, Hashimoto Yoshiya\textsuperscript{2}, Takada Shoji\textsuperscript{2}, Suzuki Kazuomi\textsuperscript{1}}
\textsuperscript{1}Hiroshima Univ., \textsuperscript{2}Hiroshima Univ., \textsuperscript{3}Nagasaki Univ.
A-20 Bactericide delivery system containing the phosphorylated polysaccharide as carrier material
  OYoshida Yasuhiro¹, Namba Naoko¹, Nagaoka Noriyuki¹, Nakamura Mariko², Takashiba Shogo¹,
  Suzuki Kazuomi¹
  ¹Okayama Univ., ²Osaka Dental Univ.

A-21 The development of ozone disinfection utilization electric toothbrush for the dental caries prevention
  OArai Koichi¹, Ando Nobuo²
  ¹Meikai Univ., ²Nippon Dental Univ. at Tokyo

[Machine and Technology]
A-22 Fabrication of dental restorations by CAD/RP-CAM method
  OSohmura Taiji¹,², Nishiyama Takahiro², Momohara Tokuo¹, Okano Kaori¹, Kitahara Kazuyoshi¹,
  Yamaguchi Satoshi¹, Kumazawa Yoichi¹
  ¹Osaka Univ., ²Bionic Co., Ltd.

A-23 Dental haptic simulator to train hand skill of student (Part 10) Realization of dual operation and speed control of dental point
  OYamaguchi Satoshi¹, Yoshida Yoshinori¹, Wakabayashi Kazumichi¹, Yamada Yuuya¹, Nagashima Tadashi¹,
  Takeshige Fumio¹, Kawamoto Yusuke², Noborio Hiroshi³, Sohmura Taiji¹
  ¹Osaka Univ., ²TGL Inc., ³Osaka Elec-Com Univ.

A-24 Dental haptic simulator to train hand skill of student (Part 8) Probing skill training for periodontal treatment
  OYoshida Yoshinori¹, Yamaguchi Satoshi¹, Wakabayashi Kazumichi¹, Nagashima Tadashi¹,
  Kitamura Masahiro¹, Kawamoto Yuusuke², Noborio Hiroshi³, Takeshige Fumio¹, Murakami Shinya¹,
  Sohmura Taiji¹
  ¹Osaka Univ., ²TGL Inc., ³Osaka Elec-Com Univ.

A-25 Effects of voids around post on stress distribution to tooth root under loading
  OTeraoka Fumio, Inaba Yoji, Yamaguchi Satoshi, Nakagawa Masafumi, Sohmura Taiji
  Osaka Univ.

A-26 Development of QCM dental materials nano sensor by sputtering
  OHashimoto Yoshiya, Minoura Sae, Honda Ryo, Nishiura Aki, Matsumoto Naoyuki, Takeda Syoji
  Osaka Dental Univ.

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Hall A
13:10-14:40 [An Open Symposium and Special Seminar 2 for Dental Materials Adviser / Senior Adviser]

Metal-free restorations made of zirconia
1. Desirable characteristics of zirconia material in dentistry
   Ban Kiyoko
   Noritake Dental Supply Co., Limited

2. Applications for zirconia in CAD/CAM technologies
   Ebihara Yoshinori
   Advanced Technologies Development Center, GC Corporation

3. The porcelain system for zirconia frame and the adhesive resin cement
   Takahashi Keiji, Teramae Mitsuji
   Shofu Inc. Research & Development

4. Considering the metal-free restoration used to zirconia -From the standpoint of clinical side-
   Shinya Akiyoshi
   Department of Crown and Bridge, Sch. of Life Dentistry at Tokyo, The Nippon Dental Univ.
A-27 Control of osteoblast behaviors on polarized hydroxyapatite
ONakamura Miho, Nagai Akiko, Tanaka Yumi, Yamashita Kimihoro
Tokyo Medical and Dental Univ.

A-28 Bone formation ability of newly developed biomimetic bone graft material
OMatsuura Ayumu, Kubo Takayasu, Doi Kazuya, Hirata Isao, Okazaki Masayuki, Akagawa Yasumasa
Hiroshima Univ.

A-29 Influence of carbon nanotubes on cell differentiation by mouse ES cells and iPS cells
OImai Koichi1, Takeda Shoji1, Abe Shigeaki2, Akasaka Tsukasa2, Uo Motohiro2, Watari Fumio2
1Osaka Dental Univ., 2Hokkaido Univ.

A-30 Surface properties of dental implants (Part 5) The relationship between adsorbed biomolecules and surface texture
OWatanabe Kouichi, Okawa Seigo, Kanatani Mitsugu, Homma Kikuo
Niigatsa Univ.

A-31 Preparation of carbonate apatite monolith by hydrothermal treatment of calcium carbonate and dicalcium phosphate mixture (Part 3)
ODaitou Fumikazu1, Maruta Michito1, Kawachi Giichirou1, Turu Kanji1, Matuya Shigeki2, Terada Yoshihiro1, Ishikawa Kunio1
1Kyushu Univ., 2Fukuoka Dental College

A-32 Inhibition of low temperature degradation by small amount addition of HA to Al2O3 mixed Y-TZP
OTanaka umi, Makamura Miho, Nagai Akiko, Yamashita Kimihoro
Tokyo Medical and Dental Univ.

A-33 Zirconia crown produced by layering technique and press-on technique
OHata Utako, Uehara Yoshiki, Sakurai Yasuyuki, Wakamatsu Nobukazu, Yamamura Osamu, Doi Yutaka, Fujiwara Shu
Asahi Univ. Sch. of Dentistry

A-34 Bonding strengths of zirconia and resin cements with surface treatments
OSato Hideo, Ban Seiji, Yamasaki Youichi
Kagoshima Univ.

A-35 Bond strength between the veneered porcelain and the zirconia frame
OOkamura Mitsunobu1, Kusama Yukio2, Kakigawa Hiroshi3, Ban Seiji4
1Okamura Dental Clinic, 2Nishishinjyuku Dental Clinic, 3Kyushu Dental College, 4Kagashima Univ.

October 2 (Friday)

P-70 Attractive force between experimental magnetic resin composite material and magnet (Part 1)
OSoma Hiroko, Miyagawa Yukio
The Nippon Dental Univ.

P-71 The evaluation for the changing of the transmittance and of the peak of the wavelength, as the dental-composite-resins are curing by the chemical and the light irradiation
OMurayama Daigo, Yoshida Takaichi
The Nippon Dental Univ.

P-72 Modification effect of benzene group silane coupling agent contained double bond (Part 6)
Water resistance of the experimental composites
P-73 Effect of fiber post on photopolymerization of composite resin in root canal

O Nihei Tomotaro1, Kunzelmann Karl-Heinz2, Ohashi Katsura1, Tanaka Takahiro1, Suzuki Toshiyuki1, Kondo Yukishige3, Yoshino Norio3, Teranaka Toshio1
1Kanagawa Dental College, 2Dental Sch. of LMU, 3Tokyo Univ. of Science

O Takahashi Hidekazu1, Iwasaki Naohiko1, Nakano Fumio1, Takahashi Hidenao1, Tanaka Shinji1, Asakawa Yuya2
1Tokyo Medical and Dental Univ., 2Chiba Institute of Technology

P-74 Comparison of viscoelastic properties of tissue conditioners

OSaitoh Setsuo, Sasaki Kaori, Nezu Takashi, Taira Masayuki, Araki Yoshima
Iwate Medical Univ.

P-75 Evaluation of self-cured acrylic resin antibacterial compound

OKiriyama Takashi, Asakura Masanori, Sato Yamato, Hamajima Souichiro, Kuroki Kenjiro, Hasegawa Akihito, Takahashi Yoshifumi, Kawai Tatsushi
Aichi-Gakuin Univ.

P-76 Development of new denture resin -Evaluation on bending strength-

OAoyagi Yujin, Kozo Umemoto, Kurata Shigeaki
Kanagawa Dental College

P-77 Microencapsulation of dibenzoyl peroxide and its application to dental materials

O Ito So, Fuchigami Kiyomi, Yoshimoto Ryuichi, Deguchi Mikito
Shofu Inc.

P-78 Microencapsulation of 1,3,5-trimethylbarbituric acid and its application on medical field

OFuchigami Kiyomi, Ito So, Yoshimoto Ryuichi, Deguchi Mikito
Shofu Inc.

[Adhesion 1]

P-79 Influence of preprocessing to bovine dentin on shear bond strength of dentin adhesive systems

OYamaguchi Kanako, Kawamoto Ryo, Yasuda Genta, Yoshida Takeshi, Ando Susumu, Miyazaki Masashi
Nihon Univ. Sch. of Dentistry

P-80 Effect of a bleaching agent to the pulp chamber dentin on the microtensile bond strength

OHaruyama Akiko, Takemoto Shinji, Hattori Masayuki, Kameyama Atsushi, Yoshinari Masao, Kawada Eiji, Oda Yutaka
Tokyo Dental College

P-81 Effect of remaining alumina particle for sandblasting on adhesive strength and bending properties of resin cement

ONishigawa Goro, Maruo Yukinori, Oka Morihiko, Tamada Yoshiyuki, Minagi Shogo, Irie Masao, Suzuki Kazuomi
Okayama Univ.

P-82 Influence of bonding strength on surface roughness of metal core Part 2 Effect of luting agents

OMatsumoto Michihiko, Takemoto Shinji, Hattori Masayuki, Hasegawa Masao, Aichi Tetsuya, Yoshinari Masao, Kawada Eiji, Oda Yutaka
Tokyo Dental College

P-83 Adhesiveness of the mouthguard materials and the dental silicone materials

OYokota Kayoko, Churei Hiroshi, Takahashi Hidekazu, Ueno Toshiaki
Tokyo Medical and Dental Univ.

P-84 Effects of metal primers for noble alloys on bonding of adhesive resin cement to noble alloys for PFM

OMinami Hiroyuki1, Minesaki Yoshito1, Onizuka Tadashi2, Suzuki Shiro3, Tanaka Takuo2
1Kagoshima Univ. Medical and Dental Hospital, 2Kagoshima Univ. Graduate Sch. of Medial and Dental Sciences, 3Univ. of Alabama at Birmingham

P-85 Effect of surface treatments on bonding durability between an indirect composite resin and two gold alloys
O Yanagida Hiroaki¹, Koizumi Hiroyasu², Sawase Takashi¹
¹Nagasaki Univ., ²Nihon Univ.

[Titanium, Casting and Corrosion]
P-86 Electrolysis of ionic solution -Organic film formed on titanium surface-
OKawa Seigo, Homma Kikuo, Kanatani Mitsugu, Watanabe Kouichi
Niigata Univ.

P-87 Machinability of experimental Ti-Ag alloys in terms of cutting temperature
OKikuchi Masafumi, Takahashi Masatoshi
Tohoku Univ.

P-88 Effect of Contact to Titanium Alloys on the Proliferation of Mouse Osteoblastic Cells in Culture
OKobayashi Masahiko, Sakagami Hiroshi, Onuki Hiroyuki, Hibino Yasushi, Nakajima Hiroshi, Shimada Jun
Meikai Jun

P-89 Dental casting using a resin pattern fabricated by CAD RP-CAM method
OSohmura Taiji, Kitahara Kazuyoshi, Ishikura Mari, Nakajima Yuko, Hoshino Shouhei, Machi Hiroyuki
Osaka Univ.

P-90 Hardness and corrosion resistance for silver-base alloys with various copper contents
OKawashima Isao, Koiso Kazuo, Ryuukata Ichiro, Ishida Yoshinori, Okada Hidetoshi
Ohu Univ.

P-91 XAFS analysis of the corrosion products of Ni-Ti alloy and stainless steel
OUo Motohiro¹, Watari Fumio¹, Asaoka Kenzo²
¹Hokkaido Univ., ²Tokushima Univ.

P-92 Corrosion resistance of commercially pure Ti coated with TiN in acidic fluoride solution
ONaganuma Hiroko, Akanuma Masayoshi, Takasusuki Norio, Endo Kazuhiko, Hashimoto Masanori, Nagano Futami, Ohno Hiroki, Ochi Morio
Health Sciences Univ. of Hokkaido

[Bioceramics 2]
P-93 Fabrication of coating glass for zirconia
ONoda Makoto, Okuda Yuji, Tsuruki Jiro, Ban Seiji
Kagoshima Univ.

P-94 Bonding strength between Zirconia and dental porcelain (Comparison with condense and press method)
OTsuruki Jiro, Noda Makoto, Okuda Yuji, Ban Seiji
Kagoshima Univ.

P-95 Comparative study on biocompatibility of zirconia and titanium with osteoblast-like cells
OYamashita Daisuke, Machigashira Miho, Miyamoto Motoharu, Takeuchi Hironobu, Takeuchi Naoshi, Kono Hiroshi, Naguchi Kazuyuki, Ban Seiji
Kagoshima Univ.

P-96 Application of dental zirconia to major connector
OSanaoka Satoshi, Iwahori Masatoshi, Goto Takayas, Adachi Masanori, Takita Fumi, Nigauri Akihiko, Miyao Motonobu
Asahi Univ.

[Porcelain, Investment, Cement and Model Material]
P-97 Mechanical strength of dental Y-TZP ceramics using glass as an additive
OWu Shih-Ching¹, Ho Wen-Fu², Hsu Hsueh-Chuan¹
¹Central Taiwan Univ. of Science and Technology, ²Dayeh Univ.

P-98 Spectroscopic analysis of silver nanoparticles doped dental porcelain
OUNo Mitsunori, Nonogaki Ryugo, Fujieda Tokushi, Omori Toshikazu, Kurachi Masakazu, Wakamatsu Nobuaki, Iijima Mayumi, Doi Yutaka
Asahi Univ. Sch. of Dentistry

P-99 Laboratory Operations for zirconia based nanocomposite -Examination of porcelain veneering procedure-
Influence of silver nano-particles on subcritical crack growth of dental porcelain

Influence by the difference of the mixing of phosphate-bonded investment

Refractory composition and expansion of rapid-burnout phosphate-bonded investment

Dimensional change of dental cement using laser sensor

Retention of crowns cemented on implant abutments with temporary cements after cycling loadings

Properties of plaster separating medium

Development of scaffolds for cell culture using an alminio-silicate nanotubes, imogolite

EF-TEM observation of H$_2$O$_2$ production from vanadium plate adherent human polymorphonuclear leukocytes

Involvement of base metal in dental precious metal alloys-induced cytotoxicity for THP.1 cell

The behavior of hepatic cells to carbon nanotubes

Culture of osteoblast cells and marrow cells on carbon nanotube scaffold

Dissolution behavior of dental Ag-Pd-Cu-Au alloy in artificial saliva including protein

Degradation of dental monomers in serum and human saliva

Dissolution behavior and pH buffering action of HA thin film formed on Ti by liquid-phase deposition method
P-114 Durability of bactericidal activity in re-improved type of electrolyzed neutral water gel by storage

O Nagamatsu Yuki¹, Kita Noriaki¹, Chen Ker-Kon¹, Tajima Kiyosi¹, Kakigawa Hiroshi¹, Watanabe Kenji², Kozono Yoshio¹

¹Kyushu Dental College, ²ASAHIPRETEC Corp.

P-115 Sterilization effects of electrolyzed neutral water on root canal irrigation

OKita Noriaki, Nagamatsu Yuki, Chen Ker-Kon, Tajima Kiyoshi, Kakigawa Hiroshi, Kozono Yoshio

Kyushu Dental College

P-116 Dimensional accuracy and deformation of stone models with alginate impression materials immersed in a hypochlorous acid water disinfectant

OHiraguchi Hisako¹, Tsunekawa Masayoshi², Yokota Kazuyoshi², Wakashima Mitsuru¹, Yui Masashi¹, Yoneyama Takayuki¹

¹Nihon Univ., ²Nippon Shika Yakuhin

P-117 Capture of bacteria and the bactericidal effect by using carbon nanotubes

O Akasaka Tsukasa, Abe Shigeaki, Uo Motohiro, Watari Fumio

Hokkaido Univ.

P-118 CT-based 3-D FE modeling of the dentulous mandible

OTajima Kiyoshi, Nakamura Keiko, Chen K-K, Nagamatsu Yuki, Kakigawa Hiroshi

Kyushu Dental College

P-119 Influence of test methodology on strength of dental implant body -Examination with finite element method-

ONagasawa Sakae¹, Yoshida Takamitsu¹, Mizoguchi Toshihide¹, Tamura Kaoru¹, Yamazoe Masatoshi¹,², Ito Michio¹

¹Matsumoto Dental Univ., ²Yamamoto Precious Metal Co., Ltd

P-120 Development of non-contact three-dimensional scanner to combine the facial morphology and texture

OHotta Yasuhiro, Kunii Jun, Kuriyama Soichi, Terui Yuichi, Nakano Haruhisa, Fujiwara Toshihisa, Miyazaki Takashi

Showa Univ.

[Numerical Analysis]

P-121 Adhesion of titanium and resin using Nd:YAG laser

OKikuchi Hisaji, Miyanaga Kohichi, Akashi Yukio, Nakano Toshiaki, Yoneyama Takayuki

Nihon Univ.

P-122 Influence of laser welding on mechanical property of dental metals

Shimakura Michio, OTakeuchi Misao, Ohta Mao, Sakai Yuma

Ohu Univ.

P-123 Properties of diamond polishing compounds

OKato Takahiro, Hoshikawa Takeshi

Yamamoto Precious Metal Co., Ltd.

P-124 Effects of water drops on mechanical spatulator for vacuum mixing and hand spatula for water-powder ratio

OKanatani Mitsugu, Okawa Seigo, Watanabe Kouichi, Kimura Isao

Niigata Univ.

[Clinical Application 2]

P-125 Effect of water immersion on the mechanical strengths of glass fiber posts

OKomada Wataru, Kumagae Naosuke, Fukui Yuji, Otake Shiho, Omori Satoshi, Miura Hiroyuki

Tokyo Medical and Dental Univ.

P-126 Influence of ultraviolet rays on dynamic mechanical properties of silicone maxillofacial prosthetic materials

O
OMurata Hiroshi\textsuperscript{1}, Hong Guang\textsuperscript{2}, Mizumachi Wataru\textsuperscript{3}, Nikawa Hiroki\textsuperscript{3}, Hamada Taizo\textsuperscript{2}
\textsuperscript{1}Nagasaki Univ., \textsuperscript{2}Tohoku Univ., \textsuperscript{3}Hiroshima Univ.

P-127 Photoelastic stress analysis with simulated periodontal ligament in three-unit fixed partial denture

OYusa Koichiro, Miura Hiroyuki, Okada Daizo, Kumagae Naosuke
Tokyo Medical and Dental Univ.

P-128 Dependence of dynamic viscoelastic properties on temperature of denture adhesives and mouth moisturizers

OKano Hiroshi, Kurogi Tadafumi, Tanaka Rika, Yoshida Kazuhiro, Minato Teppei, Murata Hiroshi
Nagasaki Univ.

P-129 The fracture resistances of the post and cores with different lengths of glass fiber posts in core parts

OFukui Yuji, Omori Satoshi, Komada Wataru, Miura Hiroyuki
Tokyo Medical and Dental Univ.

P-130 Antibacterial effects of HY contained dental cement

OSuzuki Hideaki, Tanimura Hideki, Fujita Kou, Aida Masahiro, Ikemi Takuji
Nihon Univ. Sch. Dent. Matsudo

P-131 Development of an antibacterial tissue conditioner with a biologically derived component

ONaito Yoshihiro, Hamada Kenichi, Ichikawa Tetsuo
Univ. Tokushima

P-132 Development of adhesive root canal sealer containing Mineral Trioxide Aggregate (MTA)

OWatanabe Taizo\textsuperscript{1}, Wanie Harumasa\textsuperscript{1}, Yamamoto Mitsunori\textsuperscript{1}, Nakata Kazuhiko\textsuperscript{1}, Hoshika Tomohiro\textsuperscript{2}, Nishitani Yoshihiro\textsuperscript{2}, Yoshiyama Masahiro\textsuperscript{2}, Kawai Tatsushi\textsuperscript{1}, Nakamura Hiroshi\textsuperscript{1}
\textsuperscript{1}Aichi-Gakuin Univ., \textsuperscript{2}Okayama Univ.

P-133 Recovery of contact point using various proximal restoration system

OAsakura Mitsufumi
Tokyo Medical and Dental Univ.

P-134 Development of adhesive root canal sealer inducing hard tissue formation

ONishitani Yoshihiro\textsuperscript{1}, Hoshika Tomohiro\textsuperscript{1}, Morimoto Sayako\textsuperscript{1}, Watanabe Taizo\textsuperscript{2}, Wanibe Harumasa\textsuperscript{2}, Yamamoto Mitsunori\textsuperscript{2}, Nakata Kazuhiko\textsuperscript{2}, Takahashi Kei\textsuperscript{1}, Kawai Tatsushi\textsuperscript{2}, Nakamura Hiroshi\textsuperscript{2}, Yoshiyama Masahiro\textsuperscript{2}
\textsuperscript{1}Okayama Univ., \textsuperscript{2}Aichi-Gakuin Univ.

P-135 Effect of irrigation using EDTA on sealing ability of obturation by lateral condensation method with three kinds of sealers

OOKada Nobuo, Terata Rintaro, Masuyama, Tomoyuki, Yamamoto Makiko, Kubota Minoru
Iwate Medical Univ.

P-136 Trial application of immobilizing disinfectant to the laundry

OYushita Kaori, Takamoto Yuko, Hiramatsu Minako, Ishii Hitomi, Takayama Yukihito, Okura Emi, Nikawa Hiroki, Makihira Seityo
\textsuperscript{1}Hiroshima Univ., \textsuperscript{2}Hiroshima Univ., \textsuperscript{3}Hiroshima Univ.

P-137 Application of immobilizing disinfectant to the hydroxyapatite

OHiramatsu Minako, Takamoto Yuko, Yusita Kaori, Tamura Tomoya, Ishi Hitomi, Takayama Yukihito, Okura Emi, Nikawa Hiroki, Makihira Seityou
Hiroshima Univ.

P-138 Preparation and properties of thermoplastic resin based nanocomposites for the development of FRP orthodontic wires

OYamagata Shuichi, Akasaka Tsukasa, Uo Motohiro, Iida Junichiro, Watari Fumio
Hokkaido Univ.