

Division of Clinical Cariology and Endodontology
Department of Oral Rehabilitation

Outline

Our division focuses on the research, education and patient care regarding the diagnosis, treatment, and prevention of diseases or trauma to teeth in operative dentistry and endodontology based on minimally-invasive dentistry. Our main goal is to develop dentin remineralization/regeneration therapy in caries treatment. Our faculty members and ongoing research projects are shown below.

Faculty members

Professor: Takashi SAITO, D.D.S., Ph.D.

Associate Professor: Yasuhiro MATSUDA, D.D.S., Ph.D.

Senior Assistant Professor: Masanobu IZUMIKAWA, D.D.S., Ph.D.

Assistant Professor: Yasuhiko NAGAI, D.D.S., Ph.D., Tomoo YUI, D.D.S., Ph.D.

Md Riasat HASAN, B.D.S., Ph.D. (IEEC)

Postdoctoral Fellow: Bayarchimeg ALTANKHISHIG, D.D.S., Ph.D.



Takashi SAITO



Yasuhiro MATSUDA



Msanobu IZUMIKAWA



Yasuhiko NAGAI



Tomoo YUI

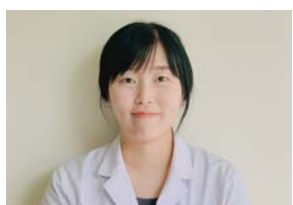


Md Riasat HASAN



Bayarchimeg ALTANKHISHIG

Instructors: Miki TANIGUCHI, D.D.S., Hiromu YAJJIMA, D.D.S., Kota SHIOMI, D.D.S.



Miki TANIGUCHI



Hiromu YAJJIMA



Kota SHIOMI

Postgraduate students: Masahiko SAKURAI, D.D.S., Karnoon SHAMSOON, B.D.S.,
Yaxin RAO, D.D.S., Hsinyu TSAI, D.D.S., Chihsun TSAI, D.D.S.,
Lou AN, D.D.S.



M. SAKURAI



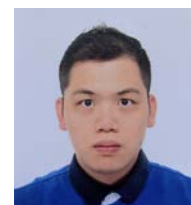
K. SHAMSOON



Y. RAO



H. TSAI



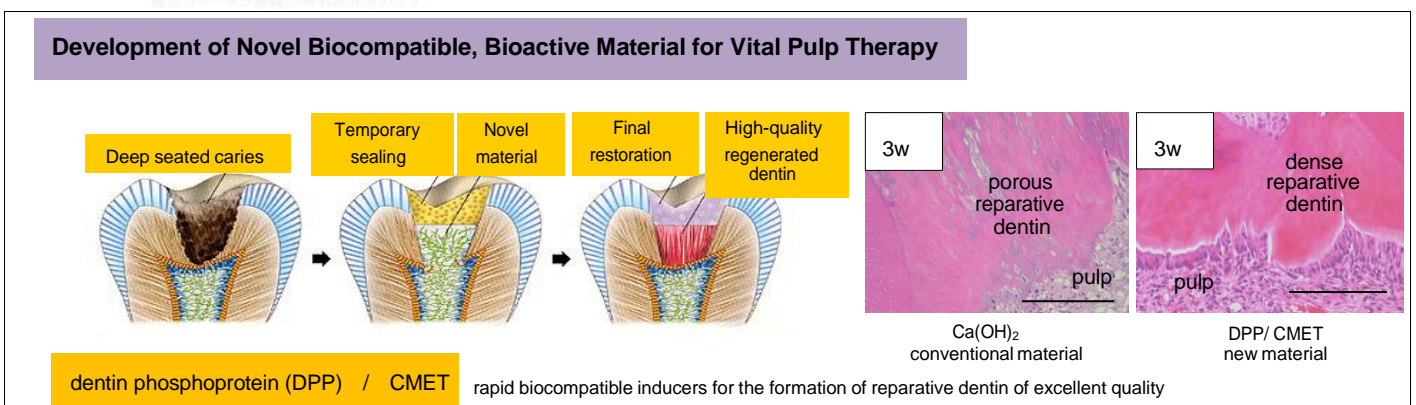
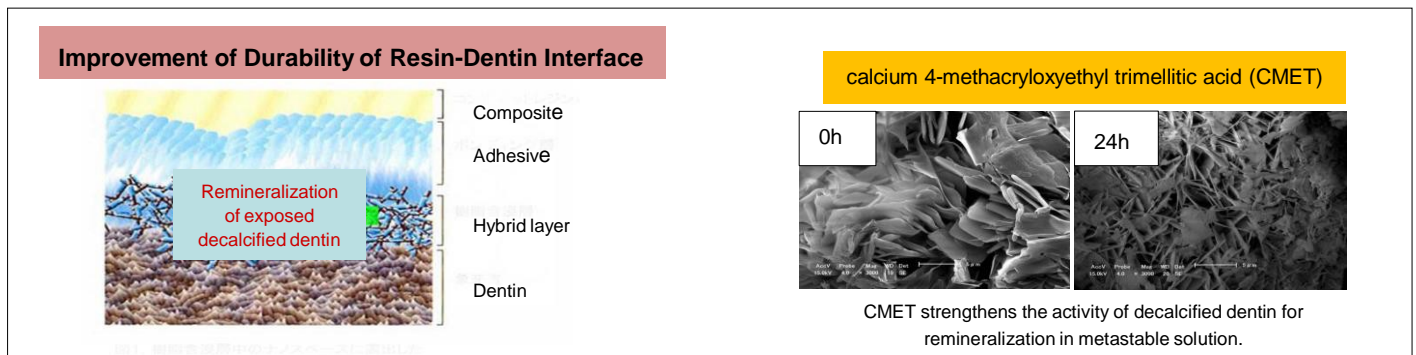
C. TSAI



L. AN

Main research in progress

- 1) Development of the multifunctional adhesive materials having remineralization and antibacterial activities
- 2) Development of the materials for dentin regeneration
- 3) Study on increase of durability of adhesive interface
- 4) Study on optimization of endodontic treatment



Current publications

- * B. Altankhishig, Y. Matsuda, F. N-Takebe, K. Okuyama, H. Yamamoto, M. Sakurai, K. Naito, M. Hayashi, H. Sano, S.K. Sidhu, T. Saito. Potential of fluoride-containing zinc oxide and copper oxide nanocomposites on dentin bonding ability. *Nanomaterials* 12, 1291, 2022.
- * B. Altankhishig, M. Khatun, M. Sakurai, Y. Matsuda, T. Saito. Antibacterial activity of zinc oxide and copper oxide nanocomposite. *Int J Med Sci Dent Res* 5, 57-62, 2022.
- * Y. Rao, Y. Qiu, B. Altankhishig, Y. Matsuda, YC. Cho, BH. Huang, HY. Tsai, CH. Tsai, KL. Ou, T. Saito. Acceleration effect of biomimetic hydrogel system on odontoblast differentiation in vitro. *DPTA J* 2, 11-25, 2022.
- * PJ. Hou, CY. Lee, KL. Ou, WC Lan, YC. Chuo, HY. Lin, HW. Chao, BH. Huang, T. Saito, HY. Tsai, TS. Yang, CJ. Walinski, M. Ruslin. Calcium release from different toothpastes after the incorporation of tricalcium phosphate and amorphous calcium phosphate. *Appl Sci* 11, 1848, 2021.
- * S. Thaweboon, T. Saito, B. Thaweboon. Anti-biofilm formation of an adhesive containing calcium salts of acidic monomers against oral candida related to root caries. *Key Engin Mater* 904, 282-286, 2021.
- * Y. Qiu, T.Saito. Novel bioactive adhesive monomer CMET promotes odontogenic differentiation and dentin regeneration. *Int J Mol Sci* 22, 12728, 2021.
- * B. Altankhishig, MAA. Polan, Y. Qiu, MR. Hasan, T. Saito. Dentin phosphoprotein-derived peptide promotes odontoblast differentiation in vitro and dentin regeneration in vivo. *Materials* 14, 874, 2021
- * S. Sultana, O. Uehara, K. Yoshida, T. Saito, Y. Abiko. The histone deacetylase inhibitor, entinostat (MS-275), induces the odontogenic differentiation of an odontoblast-like cell line in the absence of an osteoblast mineralization medium. *Odontology* 109, 661-667, 2021.
- * K. Onji *et al.* Human fresh fibrin membrane with bone morphogenetic protein-2 (BMP-2) induces bone formation in the subcutaneous tissues of nude mice. *Materials* 14, 150, 2021.
- * Y. Matsuda, K. Koshiro, M. Fujita, T. Saito. Antimicrobial effect and environmental impact of controlled release iodine water disinfectant. *Int J Pharma Med Biol Sci* 9, 56-59, 2020.
- * KL. Ou *et al.* The potential of a hair follicle mesenchymal stem cell-conditioned medium for wound healing and hair follicle regeneration. *Appl Sci* 10, 2646, 2020.
- * S. Thaweboon, T. Saito, K. Nagano, B. Thaweboon. Evaluation of an adhesive containing calcium salt of acidic monomers on inhibition of biofilm formation of bacteria related to root caries. *Key Engin Mater* 853, 41-45, 2020.
- * Y. Qiu, J. Tang, T. Saito. A novel bio-active adhesive monomer induces odontoblast differentiation: a comparative study. *Int Endod J* 53, 1413-1429, 2020.