

Division of Fixed Prosthodontics and Oral Implantology

Department of Oral Rehabilitation

Outline

Fixed Prosthodontics and Oral Implantology is at the forefront of developing materials for the computerized fabrication of restorations. Our faculty has developed new concepts and techniques for analyzing the interaction between biomaterials and cells at the molecular and genetic levels. We have strategically positioned ourselves to create, analyze, and test novel implant materials for tissue replacement and prosthetic therapy. Integrated graduate programs are available for qualified students to combine their clinical specialty certificate programs with biomaterials research.

Faculty members

Professor; Morio Ochi, D.D.S., Ph.D.

Professor (concurrent post); Takeo Maida, D.D.S., Ph.D.

Associate professor; Yukito Hirose, D.D.S., Ph.D.

Senior assistant professor/full-time lecturer; Yasuhiro Nakanishi, D.D.S., Ph.D.

Assistant professor/research associate (concurrent position); Yoshiteru Kannari, D.D.S., Ph.D.

Assistant professor/research associate; Kazuyo Nakanishi, D.D.S., Ph.D.

Assistant professor/research associate; Masahiro Yamanaka, D.D.S., Ph.D.

Clinical instructor; Miku Ishikawa, D.D.S.

Clinical instructor; Kota Shiomi, D.D.S

Clinical instructor; Yukiya Matsukawa, D.D.S

Postgraduate students

Yoshihiro Takeda, D.D.S. Masato Naganuma, D.D.S.

Takayuki Sanai, D.D.S. Kota Fujiura, D.D.S.



Morio OCHI



Takeo MAIDA



Yukito HIROSE



Yasuhiro NAKANISHI



Yoshiteru KANNARI



Kazuyo NAKANISHI



Masahiro YAMANAKA



Miku ISHIKAWA



Kota SHIOMI



Yukiya MATSUKAWA



Yoshihiro Takeda



Masato NAGANUMA



Takayuki SANAE



Kota FUJIWARA

Main research in progress

- 1) Bone repair by using Electromagnetic field, Low-intensity pulsed ultrasound and Noninvasive capacitively coupled electric fields
- 2) Surface modification of implant materials
- 3) Bone-inducing factor delivery for Tissue Engineering
- 4) The influence of the implant positioning and superstructure design on stress distribution around the implant using three-dimensional finite element analysis
- 5) Examination of the oral assessment guide usefulness for dental status of elderly in long-term nursing home
- 6) Analysis of joe movement with CNN
- 7) Development of oral simulator with reproducing the masticatory function

Current publications

- 1) Twenty Years-Passed Case of Demineralized Dentin Matrix Autograft for Sinus Bone Augmentation – A First Case of Dentin Graft in Human-, M., Murata, Y., Hirose, M., Ochi, J., Tazagi, N., Okubo, T., Akazawa, J Clin Exp Dent. 2023. Oct 1; 15(10): e861-e865. (DOI:10.4317/jced.60912.9)
- 2) Using the Oral Assessment Guide to Predict the Onset of Pneumonia in Residents of Long-Term Care and Welfare Facilities: A One-Year Prospective Cohort Study, Yamanaka M., Yamaguchi K., Muramatsu M., Miura H., Ochi M., International Journal of Environmental Research and Public Health. 2022; 19(21):13731.
- 3) Histological Evidences of Autograft of Dentin/Cementum Granules into Unhealed Socket at 5 Months after Tooth Extraction for Implant Placement, M., Murata, M.A., Kabir, Y., Hirose, M., Ochi, N., Okubo, T., Akazawa, H., Kashiwazaki, Journal of Functional Biomaterials 2022; 13, 66-73.
- 4) Genetic Characterization of Staphylococcus aureus, Staphylococcus argenteus, and Coagulase-Negative Staphylococci Colonizing Oral Cavity and Hand of Healthy Adults in Northern Japan, Mina Hirose, Meiji Soe Aung, Yusuke Fujita, Taisei Kato, Yukito Hirose, Shoko Yahata, Atsushi Fukuda, Masato Saitoh, Noriko Urushibara, Nobumichi Kobayashi, Pathogens. 2022. Jul 28; 11(8): 849. [https://doi: 10.3390/pathogens1108049](https://doi.org/10.3390/pathogens1108049).
- 5) Architecture of connective tissue regenerated by enamel matrix derivative around hydroxyapatite implanted into tooth extraction sockets in the rat maxilla, T., Shibui, T., Yajima, K., Irie, M., Ochi, Y., Sakakura, Anatomical Science International 2020; 95, 334-341.
- 6) Apoptotic Induction Mechanism of X-ray Irradiation Combined with Hydrogen Peroxide, S., Fujita, Y., Hosokawa, R., Saga, E., Tsuruga, K., Okumura, K., Ohuchi, M., Ochi, Radiation Environment and Medicine 2019; 8, 85-93.
- 7) Effect of low intensity pulsed ultrasound stimulation on sinus augmentation in rabbits, Takebe H., Nakanishi Y., Hirose Y., Ochi M., Clin Oral Implants Res 2014; 25, 735 -741.