Open Bachelor/Master Thesis Project

Deriving Milling Parameters for Teeth

BIROMED-Lab, DBE, University of Basel

IM^2, Fachhochschule Nordwestschweiz

Camlog Biotechnologies

Project background:

You will be part of the team for the project **Miniature Intraoral Robot (MIR) Performing Minimal-invasive, Personalized and Precision Dentistry**. In this project we aim to develop a robotic device for tooth preparation enabling a fully digital treatment workflow based on an innovative technology previously developed at the BIROMED-Lab. This project is interdisciplinary and organized in close collaboration with clinicians and industrial partners.

Project description:

To successfully mill teeth in an automated manner, the parameters for milling have to adapted to the material that is milled and the discomfort thresholds of the patient. Therefore, milling parameters such as feed rate, revolution speed or depth and height of the cut etc. have to be determined before the use of the robot is possible. The effects of the milling on the tooth e.g. in temperature and force have to be measured during milling experiments.

Your tasks will include:

- Analyzing the requirements and framework conditions of milling teeth without causing discomfort for the patient
- Equipping an industrial milling machine with measurement devices to monitor the tooth during milling experiments
- Conducting milling experiments on real teeth
- Analyzing the results of the milling experiments to deduct milling parameters for teeth
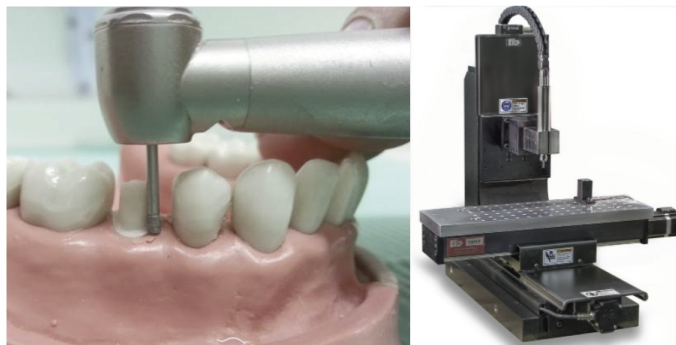
Ready to revolutionize dentistry? We are.

Apply for this project by email sending us (carina.schmidt@unibas.ch) the following materials:

- CV
- diplomas and course transcripts

Group Leaders

University of Basel: Georg Rauter
Fachhochschule Nordwestschweiz: Daniel Seiler
CAMLOG Biotechnologies GmbH: Raphael Mohler

University of Basel
Department of Biomedical Engineering

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