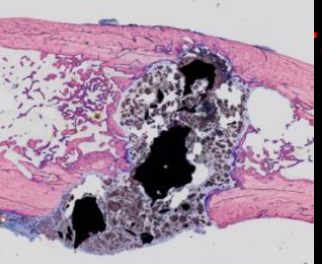
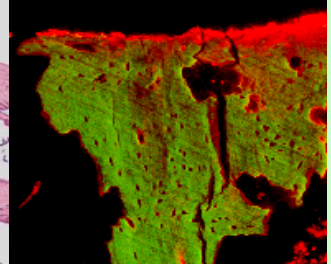
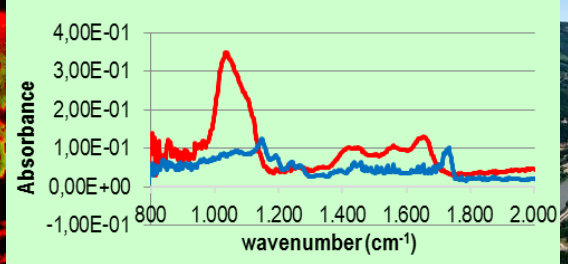

BOKU

Institut für Physik und Materialwissenschaft

IPM

Work at a leading large scale research facility in Europe!

MASTER THESIS – Vienna/Grenoble

Molecular structure of bone after application of bio-resorbable implants

Universität für Bodenkultur Wien
Department für Materialwissenschaften und Prozesstechnik

The European Synchtrotron ESRF

Background:
The master thesis will take place in the framework of a Laura-Bassi Laboratory for the development of bio-resorbable implants specifically for the use in children. Due to the resorbability of the implant it will adapt to the growing bone and a surgical removal is not necessary.

Goal:
The goal of the master thesis is to study bone at the molecular level after application of bio-resorbable implants. Particular focus is placed on potential changes in collagen cross-linking, tissue maturation and bone mineralization – factors that play a key role in determining bone quality.

Methods:
Infrared spectroscopy (FTIR) in Grenoble, preparation and data evaluation in Vienna

Co-operation: ESRF (Grenoble): Dr. Bernhard Hesse, MedUni Graz, TU-Wien, TU-Graz, ETH Zürich

General Framework:
Starting date: April 2016
Duration: 6-8 months
Including stay abroad: 2-3 months at the European large scale research facility ESRF (The European Synchrotron) in Grenoble (Frankreich) – financing via funding application

Requirements:
Interest in interdisciplinary topics and willingness to familiarize oneself with a new field.
Basic technical understanding and an interest in physics related methods will be of advantage.

Master programs:
- Biotechnology
- Biomedical Engineering
- Wood Technology and Management
- Environmental Engineering
- NAWARO
- Chemistry / Materials Science / Physics etc.

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