

Datum 04. Oktober 2023

## Abschlussarbeit/Projektarbeit: FEM modelling of biodegradable implants

### Project description:

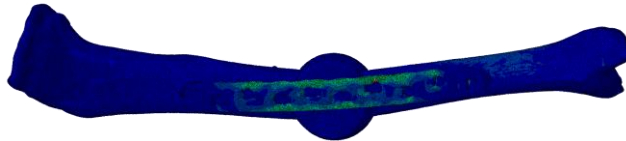


Figure 1: Implant at the tibia site.

The generally used implants such as Ti, stainless steel are bioinert and have *stress shielding* problem. To overcome these difficulties new generation of biodegradable implants made of Mg, Zn are developing at a fast pace. However, the biodegradability of such implants needs to be slow and stable so that new bone can grow in right amount of time before the biodegradability of implants get completed. To have an overview of this process, a simulation model is being prepared which can help in developing the right biodegradable Mg implant.

### Work package include:

- Implementation of corrosion model in Abaqus
- Coupling the corrosion model with already developed bone healing model

### Basic requirements:

- Basic understanding of material science
- Strong interest in the field of biomaterials

**Previous knowledge in material modelling will be helpful but not necessary**

If interested, please contact: Gargi Shankar Nayak, M. Sc.

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