



# WE ARE LOOKING FOR INTERNSHIP STUDENTS

## English and German

We are looking for motivated students from the fields of chemistry, polymer chemistry, or pharmacy who would like to work on one of the following research projects. Each project can be structured to account for **5 – 15 credit points**.

### Determining loading and release profiles of the antibiotic colistin in polymer nanogels

Start: from October  
Duration: 1-3 month

A 3-week internship is also possible in August for the quantification of colistin by fluorescence spectroscopy

Colistin, a reserve antibiotic with strong side effects, is to be loaded into existing nanogels. The passive release of colistin provides release profile with fewer side effects.

A semi-automatic method (pipetting robot and plate reader) is to be optimized for quantifying the colistin concentration in aqueous solutions. The aim is to measure smaller quantities in the picogram range by fluorescence spectroscopy and to qualify the method.

A method for loading nanogels with colistin is to be developed and then tested for its loading content and encapsulation efficiency. The previously optimized colistin assay will be used for this analysis.

A method for the release of colistin is to be developed and then tested.

### Synthesising bacteria-responsive nanogels for the delivery of antibiotics

Start: from October  
Duration: 1-3 month

Reserve antibiotics such as colistin should be released selectively at the site of action because of their strong side effects. Methods for active release are to be developed for this purpose.

The aim of this project is to optimize the synthesis of nanogels based on miniemulsions and/or precipitation polymerizations with commercially available crosslinker. In a second step, existing and new bacteria-cleavable crosslinkers will be used.

**If you are interested, please send us a short e-mail with the following information**  
**Name, field of study, semester, preferred period and research project**

**You are also welcome to contact us if you have any other questions about one of the projects.**

