

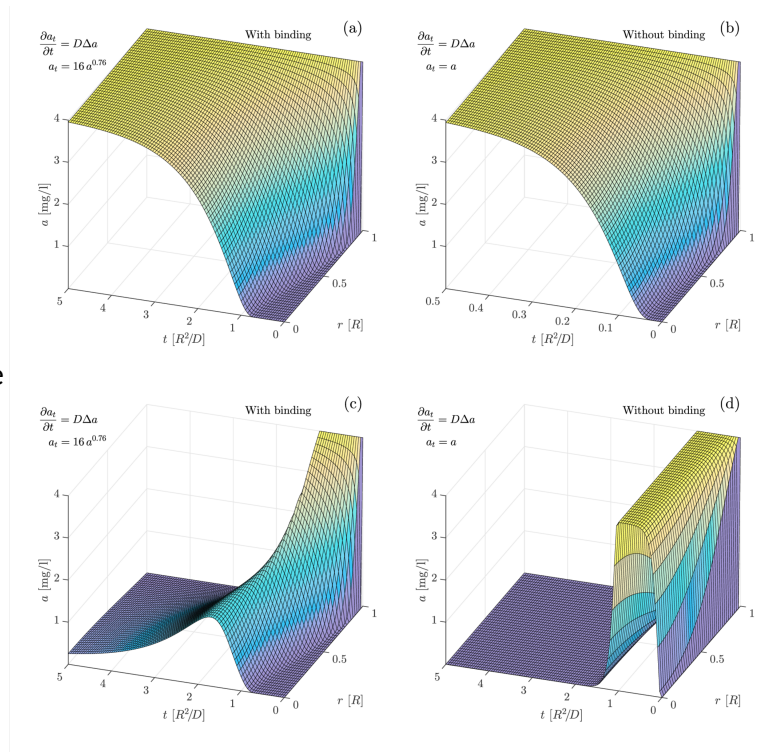
MSc/BSc-project

Title: Biofilm properties

Description:

Biofilms provide a protective matrix for bacteria proliferating inside human tissue. In this project we propose to model the properties of artificial biofilms. The aim is to understand the transport and spending of chemical species (oxygen, antibiotics, nutrients) inside the biofilm. In this way we hope to reveal how bacteria design and benefit from the protective matrix offered by the biofilm.

Figure: Example of tobramycin diffusion profile based on experimental results. Left: with diffusion retardation, Right: without diffusion retardation. (PloS ONE Vol. 11, No. 4, e0153616, 2016)



Relevant qualifications: Knowledge of signal processing, biochemistry, matlab, comsol, ...

Responsible institution: BME, DTU Elektro in collaboration with Rigshospitalet and Panum.

Contact information:

Thomas Sams <tsams@dtu.dk>, BME, DTU Elektro

Claus Moser <moser@dadlnet.dk>, Dept of Clinical Microbiology, Rigshospitalet

Mette Kolpen <mettekolpen@gmail.com>, Dept of Clinical Microbiology, Rigshospitalet,

Peter Østrup Jensen <peter.oestrup.jensen@regionh.dk>, Dept of Clinical Microbiology, Rigshospitalet.

Allowed no of students per report (1-2): Preferably 2.

Suggested DTU supervisor: Thomas Sams <tsams@dtu.dk>

The project description may be published on the website (yes/no): yes