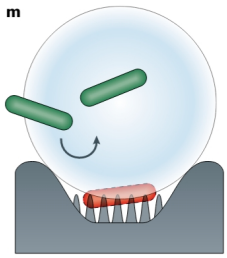
Description:

The POTATOES project, which brings together the Hubert Curien (Saint-Etienne) and MatéIS (Lyon) laboratories, is looking for a young researcher for an 18-month post-doctoral contract. The aim of this project is to study the adaptation of a bacterial population to surfaces textured by ultra-short LASER irradiations. At the interface between biology, physics and materials science, it aims to develop nanotextured surfaces to influence both bacterial adhesion and biofilm formation. This project focuses on the adaptation of bacteria following repeated exposure to these surfaces, by comparing a global quantitative approach characterizing bacterial adhesion with an approach on a longer time scale for bacteria organized in the form of biofilm, more representative of the state of bacteria when they are responsible for a nosocomial infection. This highly interdisciplinary and experimental project proposes an innovative biophysical approach to evolutionary biology questions.



Antibacterial mechanisms. From Linklater et al, Nature Reviews Microbiology, 2021

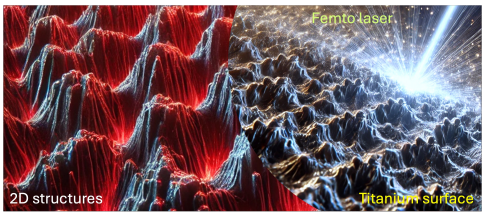


Illustration of a surface textured by femto-laser irradiations

Profile required :
- notions of biology, particularly microbiology
- fluorescence microscopy, confocal microscopy
- electron microscopy (SEM)
- image analysis

Location :
- MatéIS laboratory, I2B team (Laënnec campus, Lyon)
- LASER irradiation campaigns will take place in Saint-Etienne.

Project start-up :
- November 2025 at the latest

Please send CV and cover letter to christelle.der-loughian@insa-lyon.fr