

Forces for lateral detachment of bacterial cells from structured component surfaces

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The use of productive biofilms in biofilm reactors is a promising method for producing chemical substances [1]. For this, bacterial adhesion is a fundamental step for creating the biofilm. In our CRC 926 we develop structured component surfaces for improving bacterial adhesion. Shear forces in a flow bioreactor play an important role on bacterial attachment, which can be observed by Lateral Force Microscopy (LFM) [2]. Here we determined the number of moved bacteria on a surface when applying different lateral forces. Investigation of different structured surfaces shows a positive effect of the structures on bacterial attachment compared to an unstructured very smooth surface.

[1] G. Festel, *et al.*, Chemie Ingenieur Technik 76 (3) (2004), 307–312.

[2] a) C. E. Christersson, *et al.*, Scand J Dent Res., Jg. 19 (2) (1988), 91–98; b) R. D. Boyd, J. Verran, M. V. Jones, M. Bhakoo, Langmuir 18 (2002), 2343–2346.