

Project LiNaBioFluid

Deliverable 3.4: Images of first results of bug-like surface morphologies

Reporting period	from	01.07.2015	to	01.03.2017
Report completed and released		01.03.2017		

1. Objectives and Detailed Description

The objective of deliverable D3.4 was to provide first results of the laser structuring on hard inorganic materials to mimic surface topographies found on the integument of bark bugs.

D3.4 publically reports on Task 3.2, which involves systematic laser irradiation experiments on flat samples made of inorganic materials along with the identification of the optimum processing parameters for laser-based mimicking of bug-like surface structures.

To present first results, the aim was to publish SEM images of the micro- nanostructures found on bark bugs and SEM images of the structures fabricated by laser ablation on the “LiNaBioFluid” homepage (www.laserbiofluid.eu).

2. Evaluation of Goals and Resulting Actions

The images of D3.4 have been published successfully on the “LiNaBioFluid” website in combination with a short explanation. In **Figure 1**, the published images are shown.

SEM images of the bark bug integument as biological model are presented on the top ((a), (b)) and SEM micrographs of the laser processed steel material (titanium alloy, 100Cr6) ((c), (d)) are presented at the bottom.

The spike structures have been fabricated by laser-induced self-organization and have approximately the same size and shape as the natural model. They are the result of systematic radiation experiments on inorganic materials as different kind of steel, a titanium alloy and silicon.

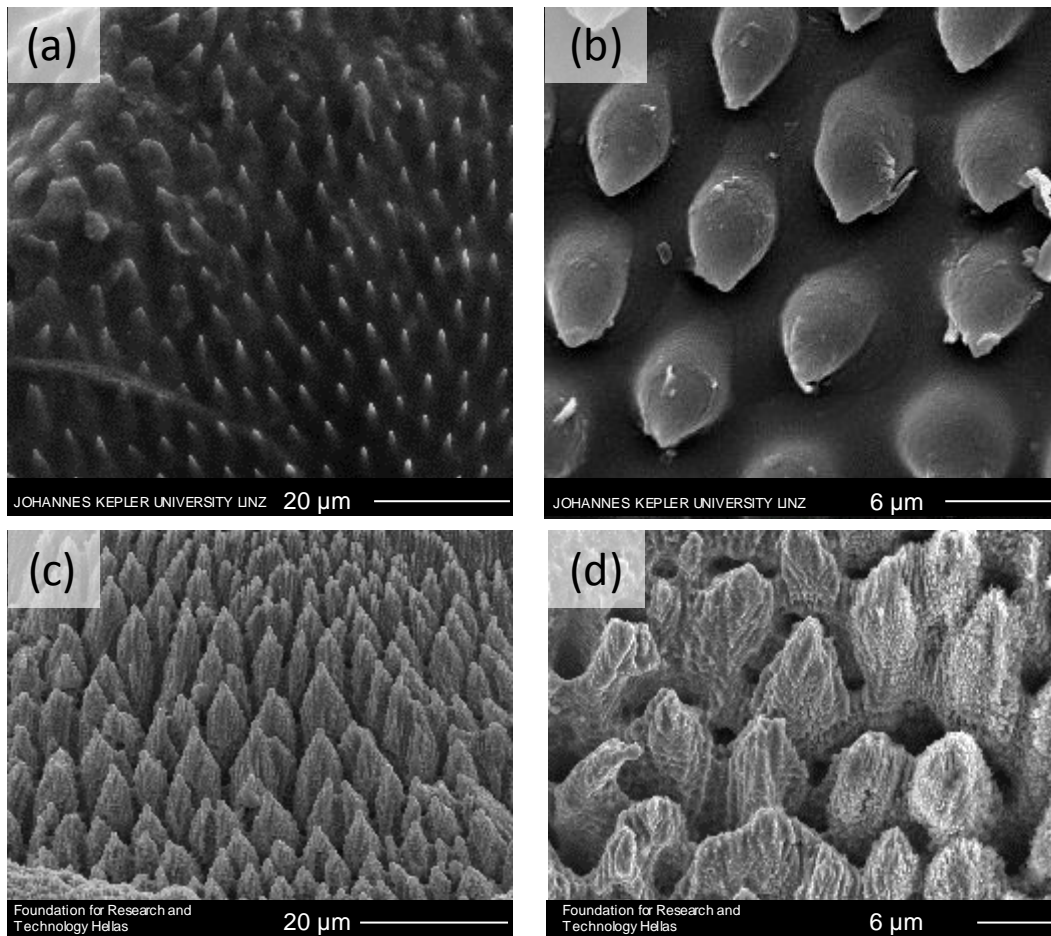


Figure 1 (a), (b) SEM images of different positions at the integument of bark bugs. (c), (d) Laser-induced self-organized nanostructures mimic the topography of (a), (b) on (c) a titanium alloy and (d) 100Cr6.