

## Laser-initiated liquid-assisted microstructuring of surfaces

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## **Abstract**

This work will demonstrate the microstructuring of semiconductor surfaces i.e. Si using ultra-short duration laser pulses. Surface processing, which can be achieved by immersing the sample in any one of a several different organic liquids, relies on both far and near field optical effects. The processing methods employed in this work should be extendable to, for example, larger-scale fabrication of nanostructured semiconducting junctions and tissue engineering applications.

## Literature reference:

- 1) 3-D patterning of silicon by laser-initiated, liquid-assisted colloidal (LILAC) lithography, M. Ulmeanu, M. P. Grubb, F. Jipa, B. Quignon and M. N. R. Ashfold, Journal of Colloid and Interface (in press) doi:10.1016/j.jcis.2014.11.001
- 2) Formation of ordered arrays of Si and GaAs nanostructures by single-shot laser irradiation in near-field at the solid/liquid interface, M Ulmeanu, P Petkov, H Hirshy and E Brousseau, 2014 Mater. Res. Express 1 015030 doi:10.1088/2053-1591/1/1/015030
- 3) Scalable fabrication of nanostructured p-Si/n-ZnO heterojunctions by femtosecond-laser processing, D G Georgiadou, M Ulmeanu, M Kompitsas, P Argitis and M Kandyla, 2014 Mater. Res. Express 1 045902 doi:10.1088/2053-1591/1/4/045902

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