

# AFM characterization of FEL irradiated samples

The aim of this project is to achieve better understanding of the interaction of intense XUV radiation with solid materials, in view of its prospective technological applications. The CFEL XM theory group is developing a modeling software which can simulate the interaction of intense XUV radiation with technologically relevant materials such as silicon and diamond. It is essential to check the accuracy of this code by comparing its predictions with experimental data. For this purpose, silicon and diamond samples were irradiated with single XUV FEL pulses with well known fluence parameters. The task is now to characterize the laser generated craters in these materials by means of AFM microscopy and to compare size and depth of these craters with the prediction of the software. This will validate the code accuracy and eventually help to improve it. Publication of the results is expected.

## Field

A1: Solid-state physics and nanoscience (application oriented)

## DESY Place

Hamburg

## DESY Division

FS

## DESY Group

FS-FLASH-O

## Special Qualifications:

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