

Abstract: The thesis deals with an experiment for studying adsorption of phthalocyanin molecules on silicon surface passivated by a tin reconstruction. The main technique used for imaging surface is scanning tunneling microscopy (STM). The work contains a brief introduction to the studied problem. It deals with the STM method and STM construction. The used ultra-vacuum experimental system is characterized together with particular steps at sample preparation for STM measurements. During the sample preparation all necessary operations were tested on the newly modified system and calibration measurements of sample annealing and tin deposition were performed. A structure of the prepared surface Si(111) 7×7 was investigated by STM and conditions for the preparation in the new system were specified. STM images were used for an evaluation of results at optimizing preparation of the passivated surface. Obtained results are important for further experiments in frame of a research focused on growing molecular structures on silicon surfaces.