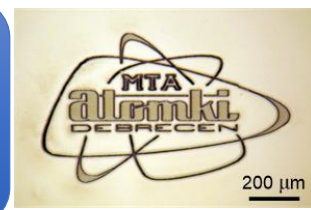


# Production of micromechanical components, microfluidic and microoptical devices



## Preface

MeV energy protons can be focused down to micrometer lateral resolution in the scanning ion microprobe facility. Proton Beam Writing (PBW) is a 3-dimensional direct write lithography method.

## Infrastructure

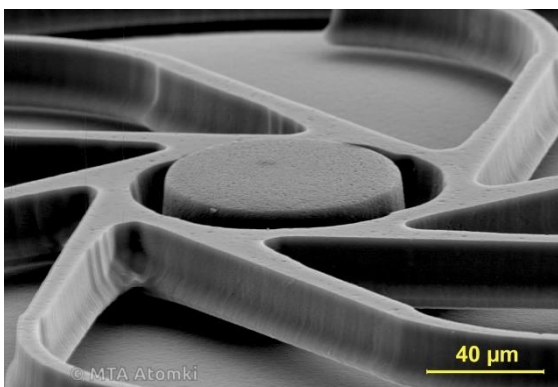


Proton microprobe

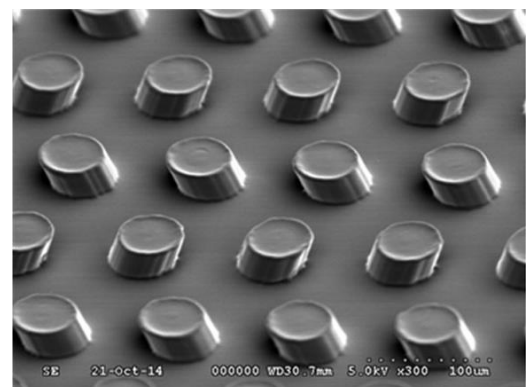
Arbitrary patterns can be generated from any pixel or vector graphical image. The proton beam is scanned over the sample surface by a dedicated software using its own binary file format that contains the sequence of the pixels.

Depending on the irradiated resist material the samples can be developed hence the 3-dimensional structures revealed. In positive resists the material will be removed where irradiated, while in negative resists it is the opposite.

## Examples



This microturbine was made in Silicon by PBW and subsequent porous-Si development in collaboration with MFA.



These tilted micropillars were made in PDMS for for purpose of making a microfilter in a microfluidic device.