

Abstract Submitted
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Development of tip Scanning High Speed AFM operating at 1,000 Lines/s & 15m UMIT CELIK, Material Science and Engineering, Istanbul Technical University, Turkey, IHSAN KEHRIBAR, NanoMagnetics Instruments, Turkey, KUBRA CELIK, Material Science and Engineering, Istanbul Technical University, Turkey, H. ZGR ZER, Physics Department, Istanbul Technical University, Turkey, AHMET ORAL, Physics Department, Middle East Technical University, Turkey — High speed atomic force microscope allows imaging dynamic processes on the surfaces. We have developed a very high speed tip scanning atomic force microscope (HS-AFM). We designed the tip scanning system to overcome the sample size limits, with a beam tracking capability to follow the cantilever motion. A high resonance frequency flexure scanner developed which has 15m scan range in XY and 3m in Z axis. A novel FPGA based high speed scanning and data acquisition system was developed. The scanner is driven by sine wave in X-axis to avoid resonances and data were captured at equal sample intervals. 1 KHz line scan rate is achieved at 15m scan range with the HS-AFM.

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