

YOSHIOKA LAB.

Controlled Precision Machining

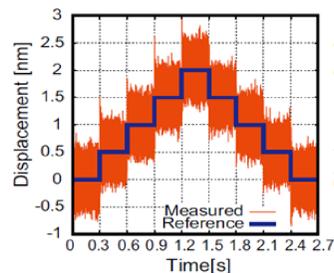
Department of Mechanical and Biofunctional Systems



Production Engineering
Department of Mechanical Engineering, Graduate School of Engineering

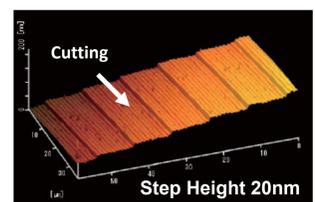
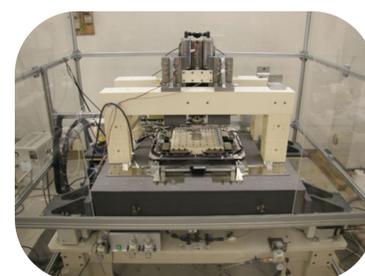
<https://yoshioka-lab.iis.u-tokyo.ac.jp/>

- Realization of Advanced Machining Technology
- Control of Machining Factors nearby Machining Point



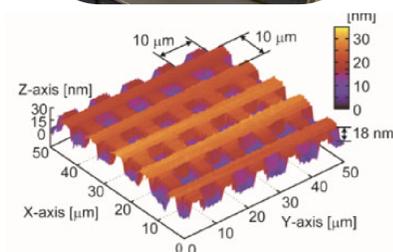
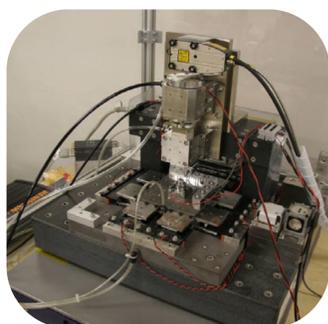
Ultraprecision Motion Control

- Nanometer position
- Ideal Mechanical Structure



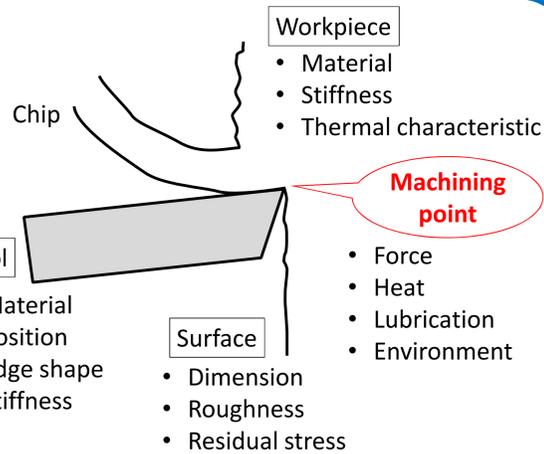
Ultraprecision Machining System

- Nanometer positioning capability
- High Stable Mechanical Structure



Nano Measurement

- 3D Measurement
- Abbe Error minimization



Workpiece

- Material
- Stiffness
- Thermal characteristic

Tool

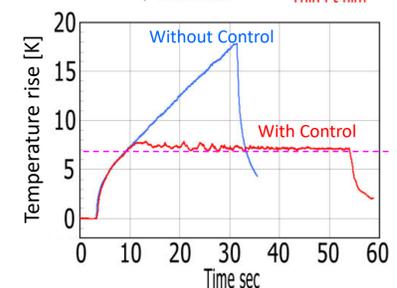
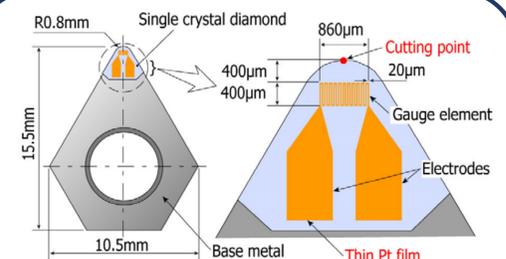
- Material
- Position
- Edge shape
- Stiffness

Surface

- Dimension
- Roughness
- Residual stress

Machining point

- Force
- Heat
- Lubrication
- Environment



Cutting Tool with Micro Thermosensor

- Monitoring of Thermal behavior
- Control of Machining Temperature

Fast Tool Servo for Milling process

- Axial Positioning of Cutting Tool
- Texturing on Curved Surface

