

Obikawa Lab.

[Advanced Machining/Manufacturing Systems]

Department of Mechanical and Biofunctional Systems

<http://obikawalab.iis.u-tokyo.ac.jp>

Fine Machining and Fabrication Systems

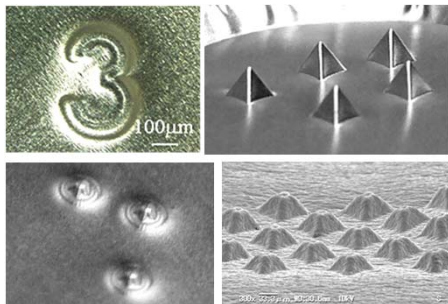
Department of Mechanical Engineering

Advanced Machining/Manufacturing Systems

Research topics

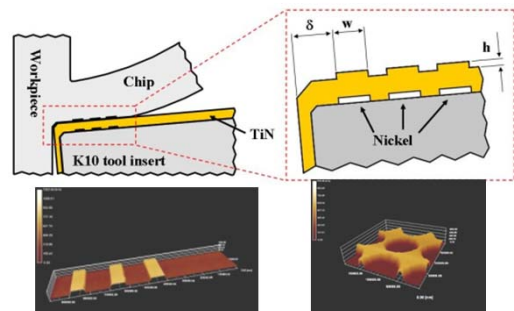
- ◆ High performance coated tools with micro surface textures
- ◆ Micro-incremental forming of miniature shell structures of thin foil
- ◆ Cutting tools with built-in thin film sensors
- ◆ High-speed and high efficiency cutting of aero-space materials
- ◆ Ecological machining of aero engine materials
- ◆ Multi-physics analysis of machining

Micro-incremental forming of miniature shell structures



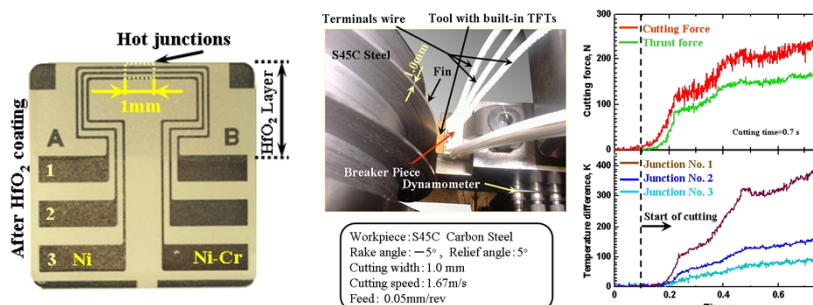
Miniature shell structures of aluminum foil and an array of pyramids of thin ceramic film fabricated through a special process (lower right)

High performance coated tools with micro surface textures



Micro surface textures on the tool face

Cutting tools with built-in thin film sensors



A tool insert with thin film thermocouple and measured cutting temperature and cutting force

Multi-physics analysis of machining

