

CMI

# TSUCHIYA LAB.

## [Machining/Assembly technologies for high-efficiency manufacturing]

Department of Mechanical and Biofunctional Systems

Applied Micro Manufacturing

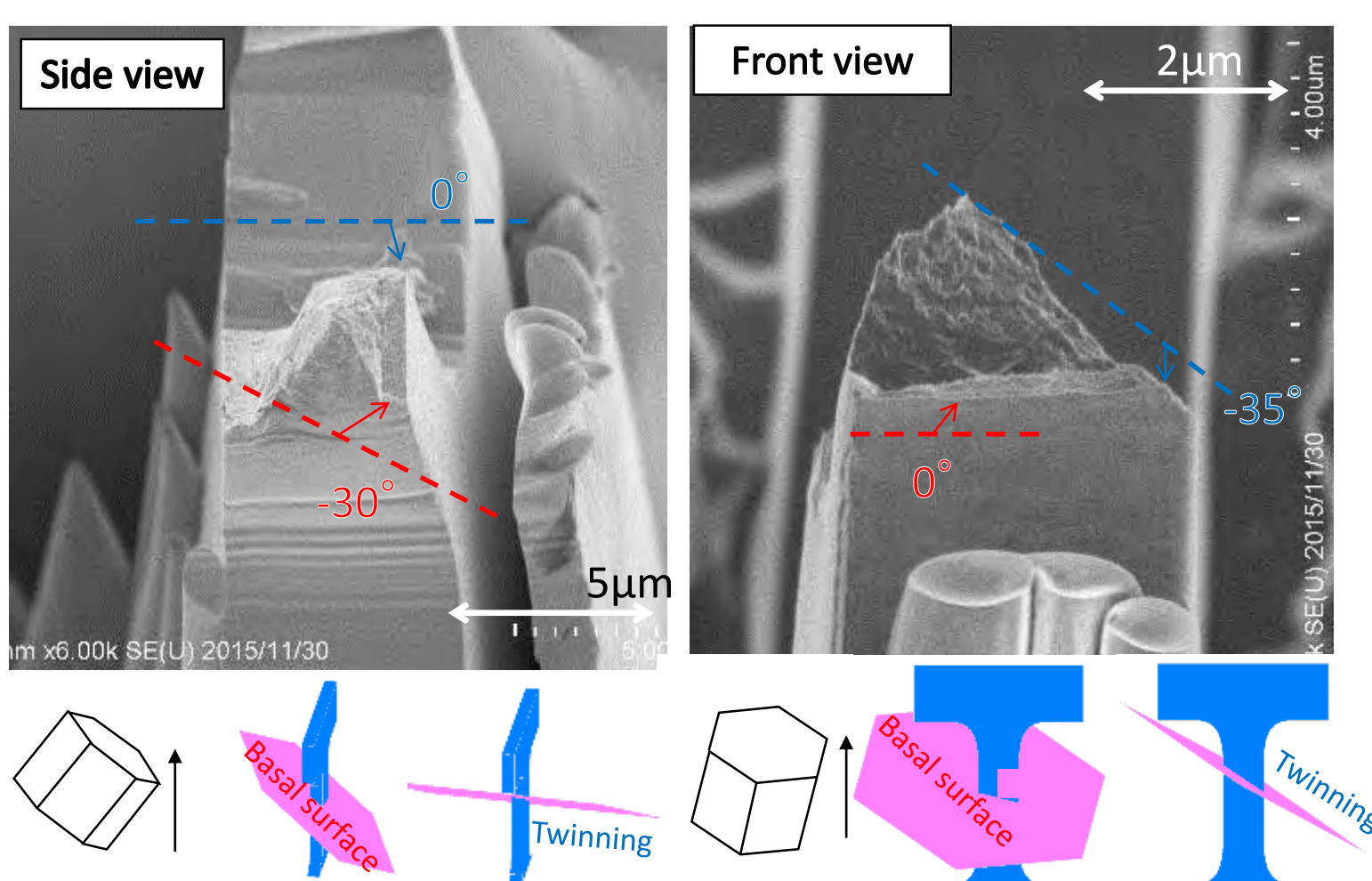
Department of Mechanical Engineering

<http://cossack.iis.u-tokyo.ac.jp/top-j.html>

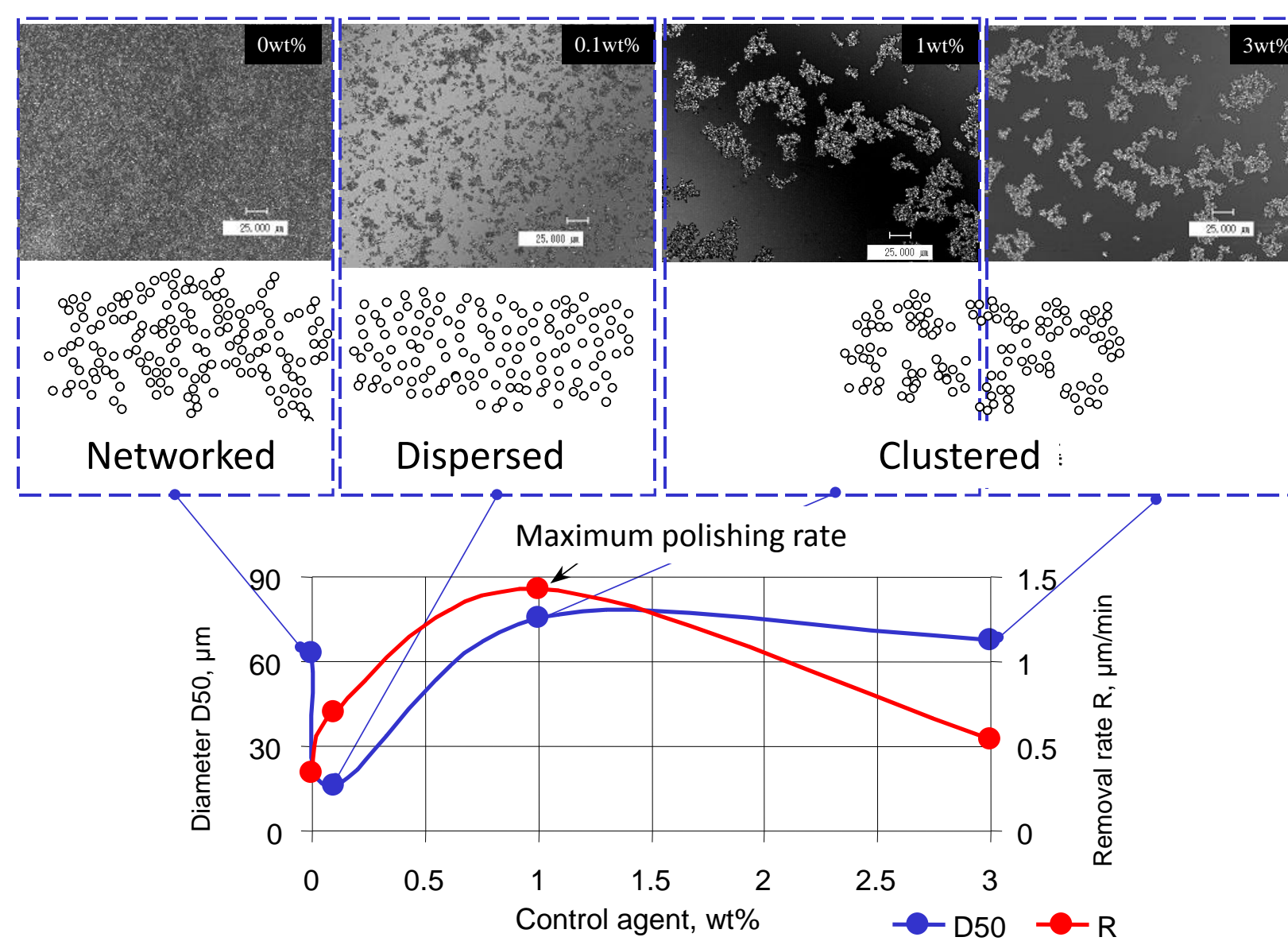
### Machining/Assembly Technologies for High-efficiency Manufacturing

Our laboratory develops machining technology that creates a shape, and assembling/implementation/inspection of the components technology for from micro-scale to macro-scale devices.

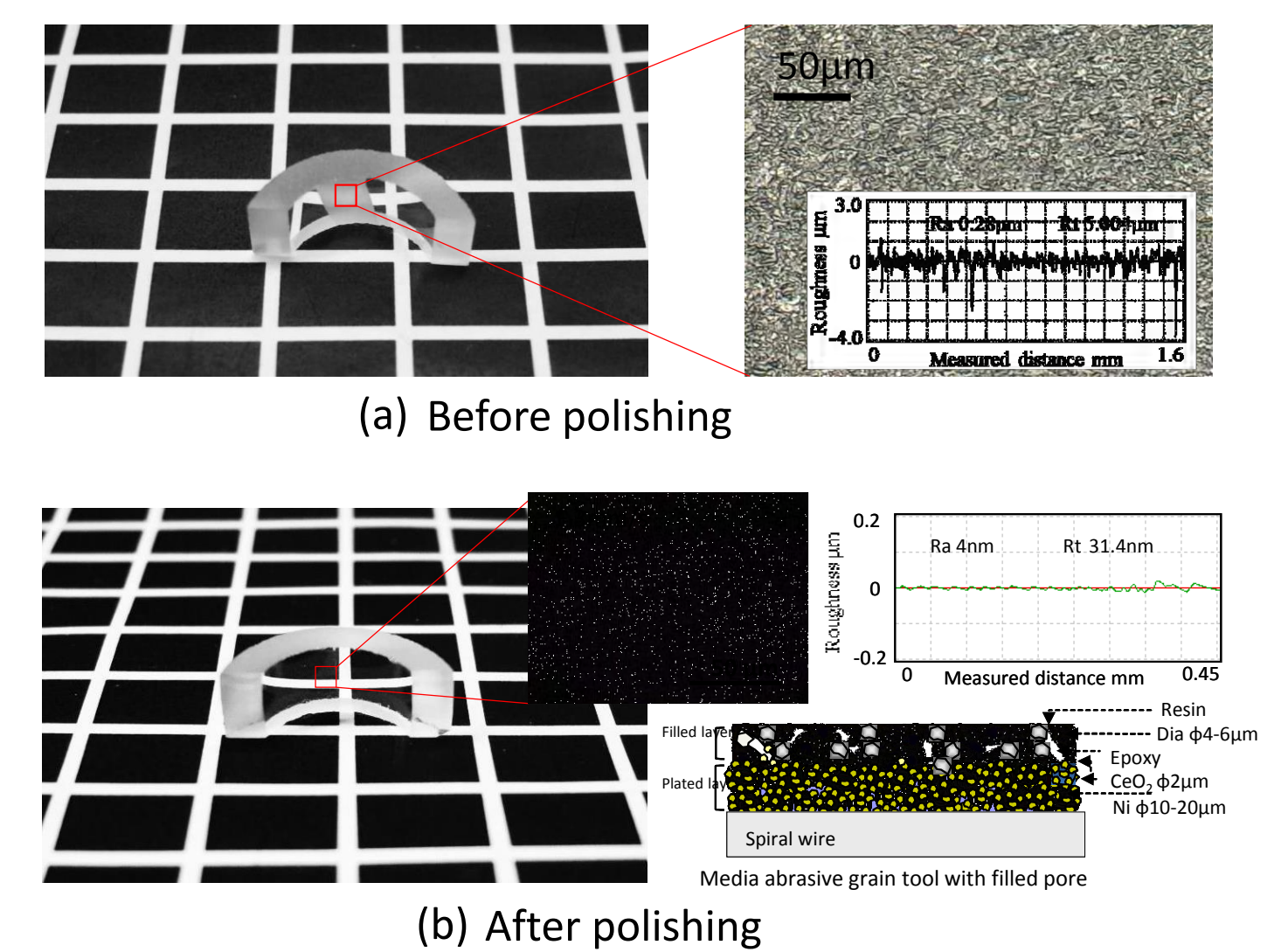
- ◆ Advancement of aircraft manufacturing technology
- ◆ Optimization of the Sharpening Method for Improvement of Cutting Performance
- ◆ Development on fixed abrasive tool with continuous pore
- ◆ Study on characteristics of polishing slurry with microscopic observations
- ◆ Micro-scale fatigue test system with real-time observation
- ◆ High-quality and low-cost production system using Mahalanobis-Taguchi method
- ◆ Quantitative analysis of spatial properties of highly-skilled handwork
- ◆ Micro/Nano structures on the roll mold surface by composite plating



Fatigue test under real-time observation.



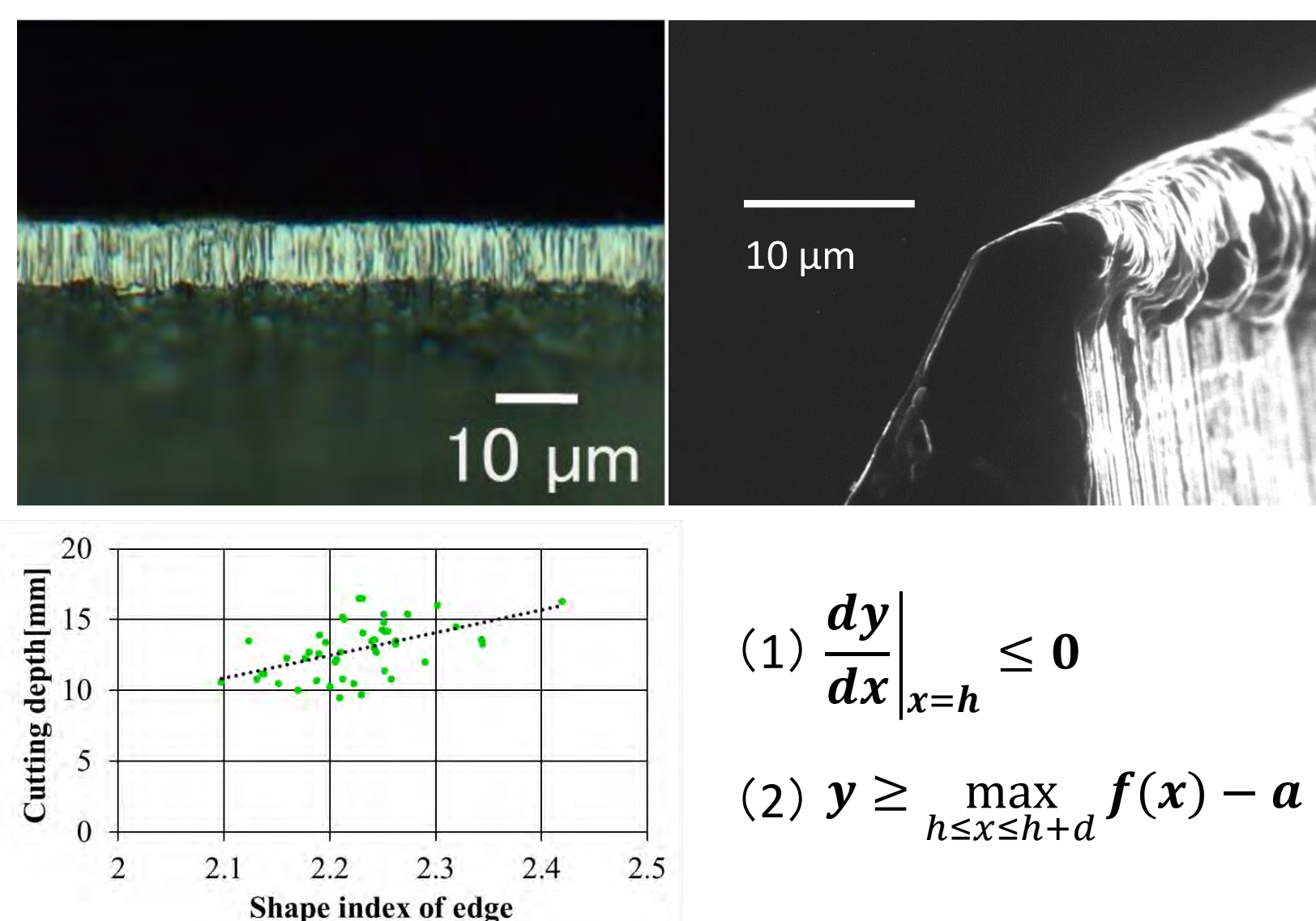
Relationship between polishing rate and dispersibility of abrasive grains in polishing slurry.



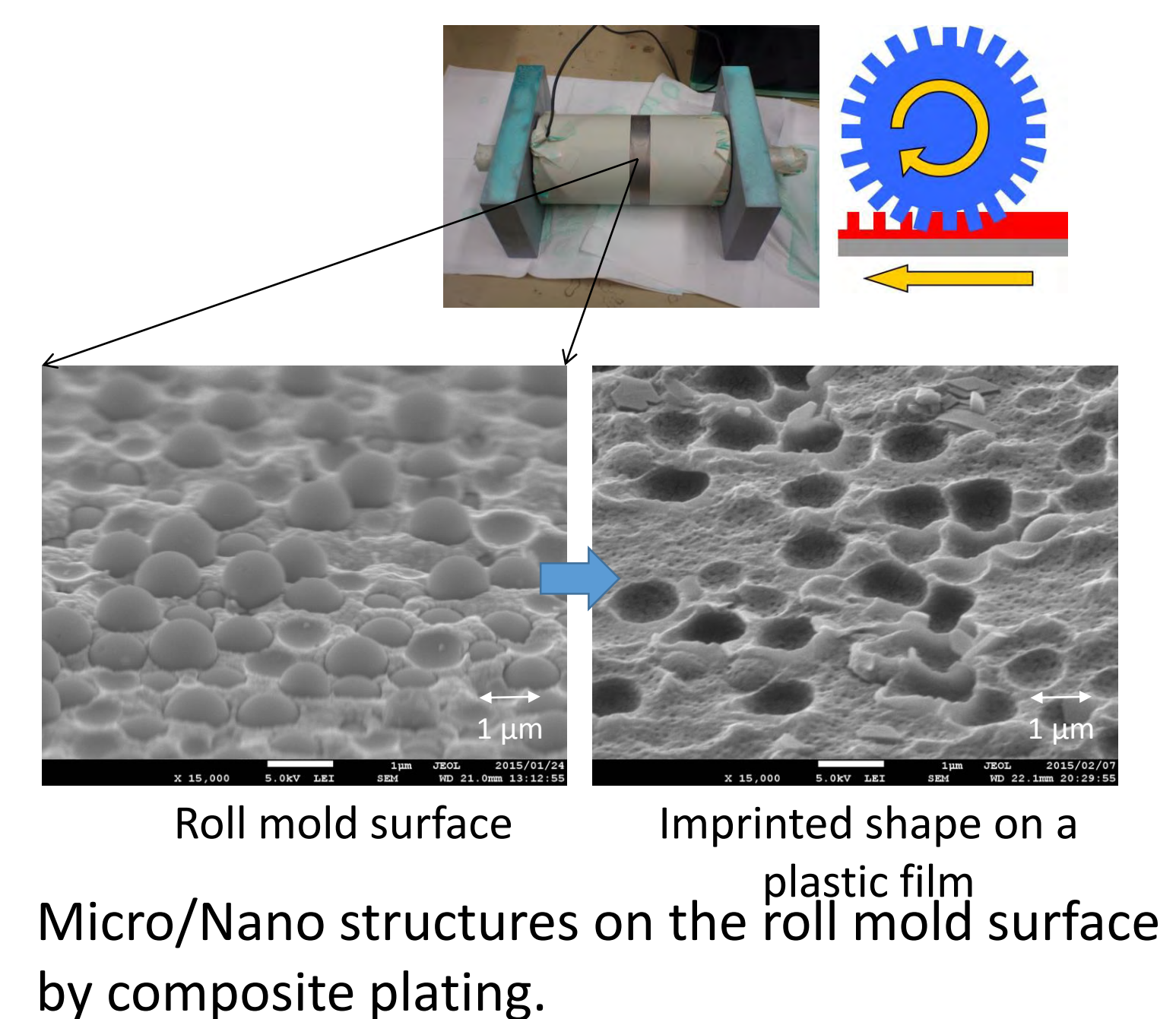
Fixed micro abrasive tool with super long life.



3D mixing system of powder using dividing channel, and mixture of Al<sub>2</sub>O<sub>3</sub> and SiC.



Relationship between the edge shape of a cutting blade and its cutting performance.



Micro/Nano structures on the roll mold surface by composite plating.