MSE method
The mechanisms of wear progression

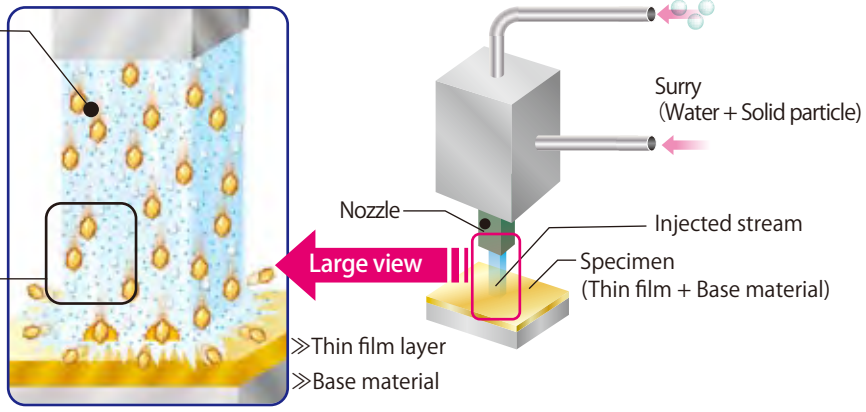
A System structure

1 Solid particle

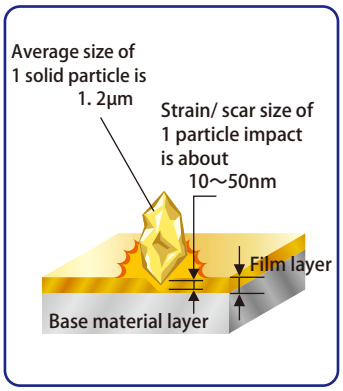
High-velocity acceleration of one solid particle generates nanometer size of wear progression. With the impact of large amount of particle (5-10 hundred million solid particles per second) on material surface, generates high velocity wear progression.

2 Injection stream

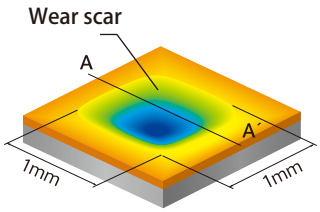
Accelerate solid particle in stream form of mist, conducts cooling on specimen surface and prevent expansion.



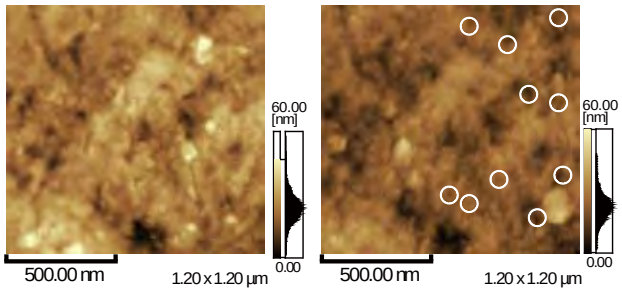
B Wear mechanism



Wear occur on specimen surface by generating erosion (a strain/ scar occurred at the surface by particle collusion) using high-velocity collusion of solid particle impact.



Wear scar



Nano-scale roughness of wear surface

C Wear progression mode

Wear mode	Hardness (sample < particle)	Hardness (sample > particle)
Cutting mode	○	
Brittle wrecking mode		○
Fatigue wrecking mode		○
Adhesion wrecking mode	○	
Micro-ductile wrecking mode	○	○
Oxidation wrecking mode		○
Grain boundary wrecking mode		○

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