

Expected Effects

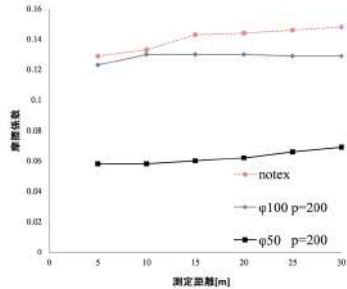
from Laser Micro Texture Processing

Control various surface functions by forming any fine surface shape

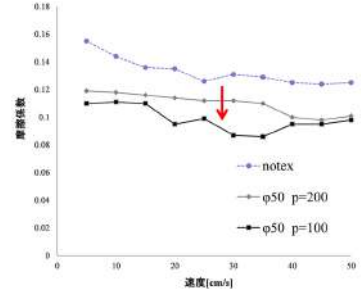
1. Tribological Characteristics

Low friction
Low wear
Reduced noise and vibrations
Fluid characteristics

Presence/Absence of Dimples and Shape Difference Characteristics



Presence/Absence of Dimples and Shape Difference Characteristics



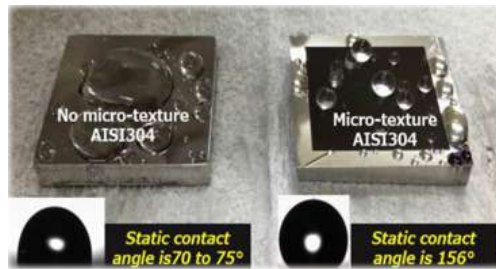
BOD test method / Test specimen: SUS420 / Opposite material: SUJ2 hard ball

Application to sliding parts (e.g., bearings and cylinder liners) is progressing as texture application technology with a low thermal impact and high regularity compared to conventional methods in the tribology field.

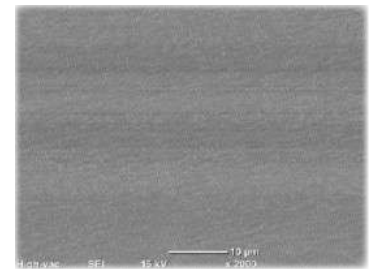
2. Material Adsorption Characteristics Control

Water repellency
Hydrophilic
Releasability
Adhesiveness
Antibacterial

Ultra-water repellent Function on a Metal Surface



Improvement in Releasability for Injection Molding



Achieve a contact angle of 150 degrees or more by applying a laser induced periodic surface structure (LIPSS) and forming a surface texture. Applied research on improving releasability and antibacterial properties is proceeding in addition to water repellent processing.

3. Optical Characteristics

Reflectance
Diffusivity
Transparency
Decorativeness

Anisotropic Structural Color Design Processing



Anisotropic Structural Color Processing (Mosaic Processing)



Structural color processing with high designability is possible by controlling the directionality of the nano-periodic structure and applying it in a mosaic pattern. Resin transfer is also possible. Therefore, development toward application to the decoration of containers is proceeding.



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