



**Technical Reports:
Cleaning Process**

POINTek, Inc.

◆ Cleaning Process

- Reliability of Optical Devices Packaging Is Initially Determined by Cleaning Process.
- A Very Effective Cleaning Process Must Avoid Any Damage on the Surface.
 - Effective Removal of Particles/Dust
 - Effective Removal of Contaminant
 - Adhesion Improvement
- Conventional Process Such as Ultra-Sonic May Not Be Suitable Method to Clean The Facet Surface.
- The Engineering Staff in POINTek Has Developed Several Effective Cleaning Methods for Cleaning Processes for:
 - Internal Process
 - Customer Support
 - Public Support

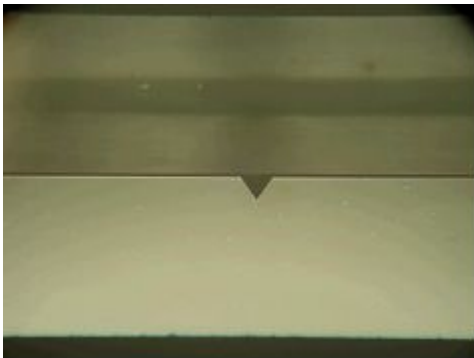
For the Additional Reliability Information, Please Contact Us.

2. Particle Removal: Polished Surface

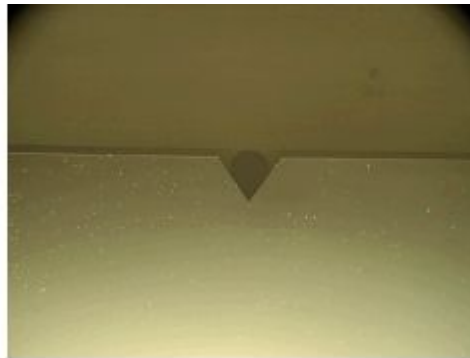
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- ◆ Before Cleaning Process (After Edge Trimming & Polishing)

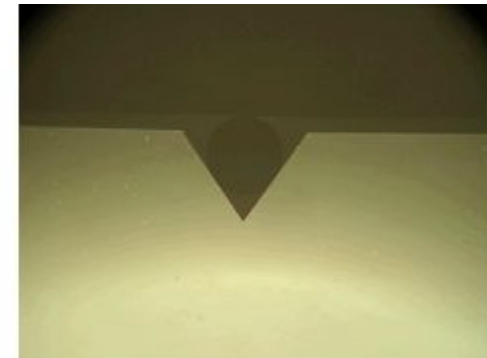
➤ X 50 Magnification



X100



X200



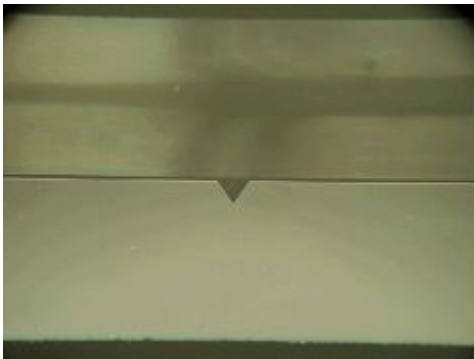
- There Are Many Particles and Dusts on the Surface after Polishing and Dicing, ...

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◆ After Ultra-Sonic Cleaning Process

➤ X 50 Magnification



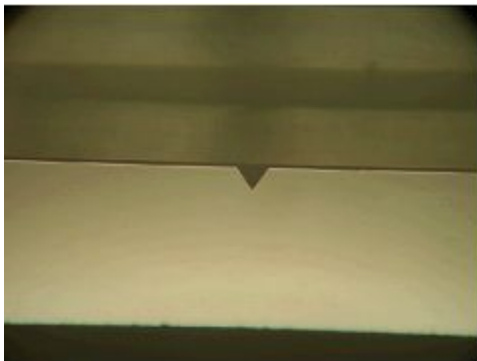
X100



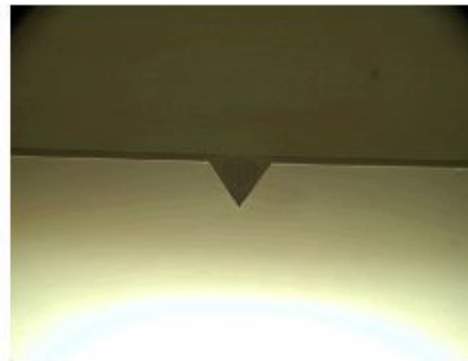
➤ Ultra-Sonic Cleaning process Cannot Remove Most of Particles/Dusts on the Cleaning Surface.

◆ After Appropriate Cleaning Process

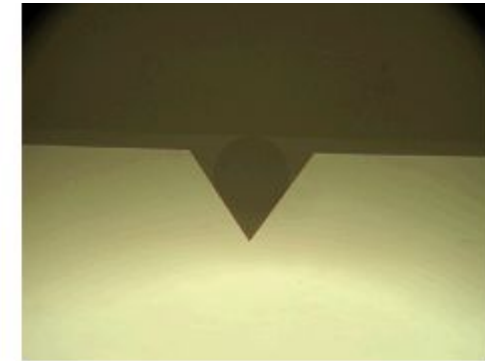
➤ X 50 Magnification



X100



X200



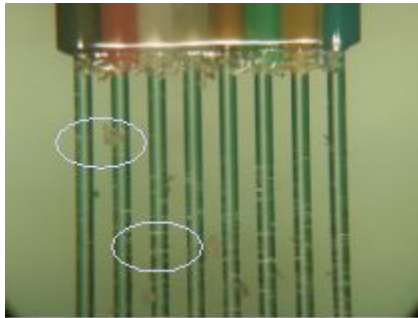
➤ POINTek's Process Can Remove Most of Particles, Dusts and Contaminants on the Surface.

3. Residue Removal: Optical Fibers

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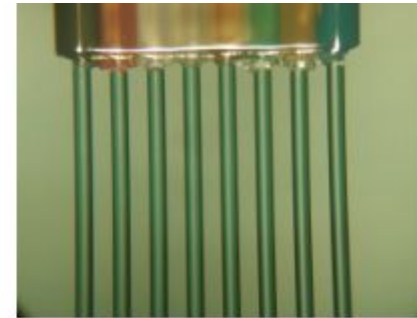
◆ Residue Removal on Optical Fiber Surface

➤ Conventional/Current



Conventional Removal Process by
Wet/Ultra-Sonic & Alcohol/Lint-Free
Paper

➤ POINTek's Process



No Coating Residue

- ✓ These Residues Will Act as Kink Sites to Cause Delamination Problem.
- ✓ Also, Conventional Methods Still Leave Organic Contaminant on The Fibers.
- ✓ POINTek's Process Can Remove These Polymeric/Organic Residues Completely without Any Damage on The Surface.

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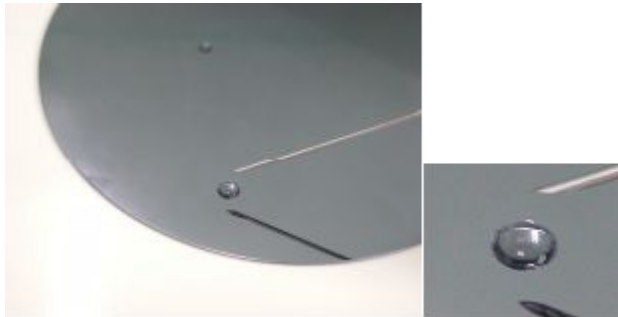
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4. Contaminant Removal: Substrates

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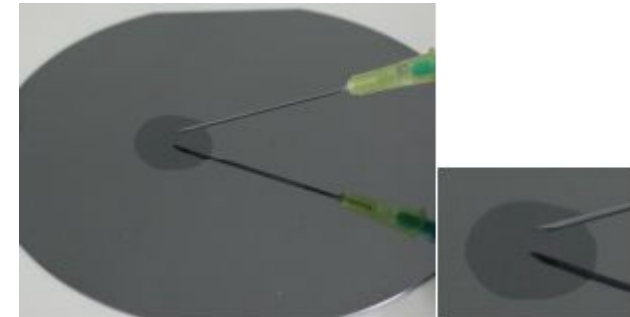
◆ Contaminant Residue Removal on Optical Substrate Surface

➤ Conventional/Current



Conventional Cleaning Process by Wet/Ultra-Sonic

➤ POINTek's Process



Uncontaminated Surface

- ✓ A Contaminated Surface Is Hydrophobic or Nonpolar State.
- ✓ A Clean Surface Is Hydrophilic or Polar State: Water Drop Is Spread out Completely Due to "Polar-Polar Interaction".
- ✓ POINTek's Cleaning Processes Easily Remove Any Contaminant to Provide The "Clean Surface".

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