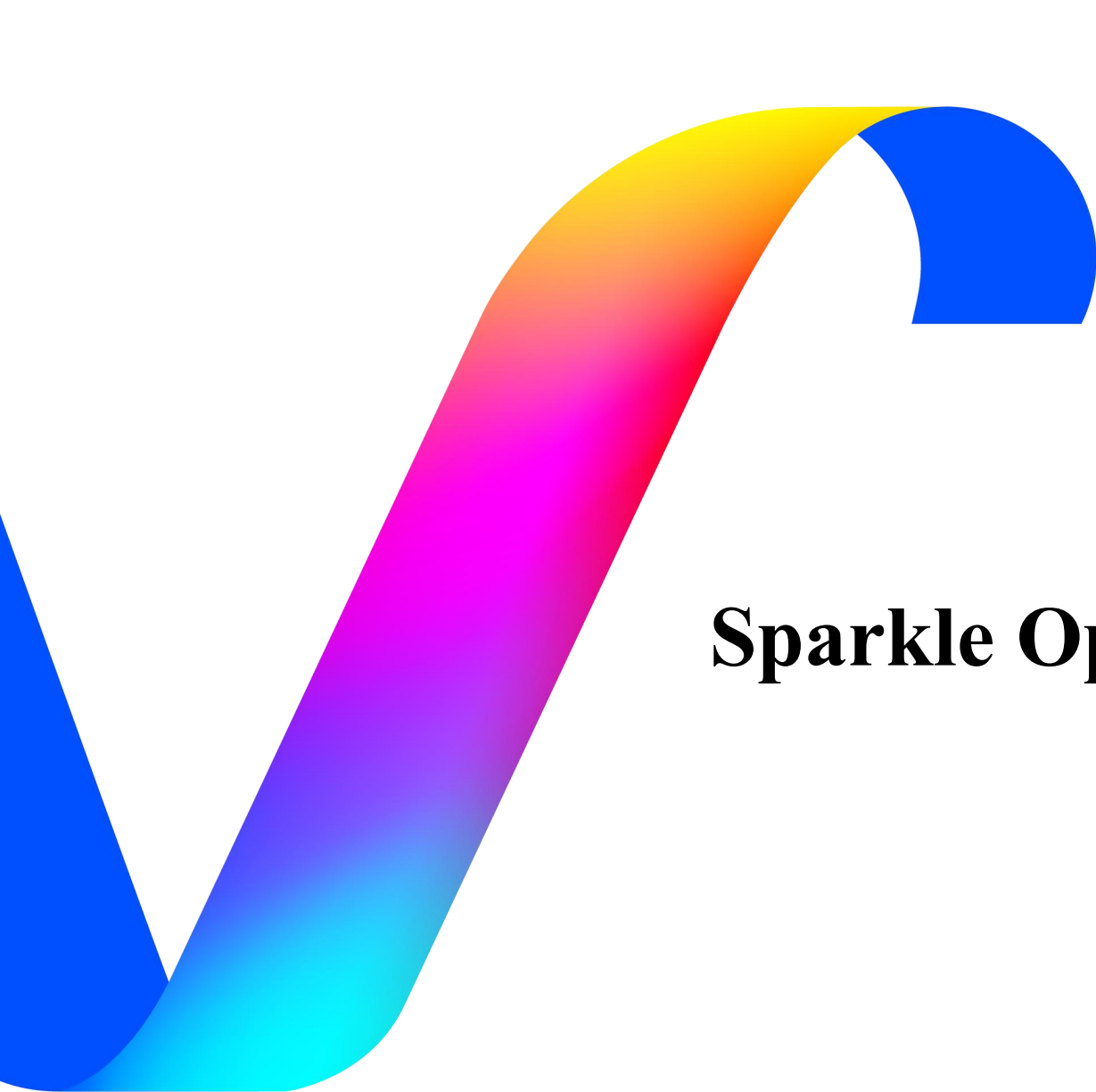


A large, stylized graphic of the letter "V" is positioned on the left side of the slide. It features a vibrant rainbow gradient, starting with blue at the bottom left, transitioning through green, yellow, and orange, and ending with red at the top right. The "V" is thick and has a smooth, flowing appearance.

Sparkle Optimization in Display Modules with Anti-Glare Cover Glass

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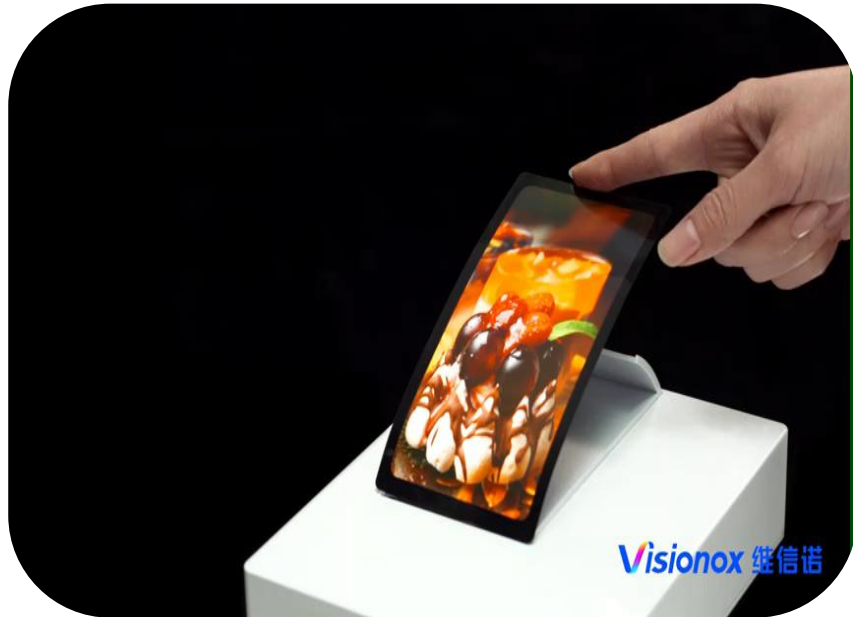
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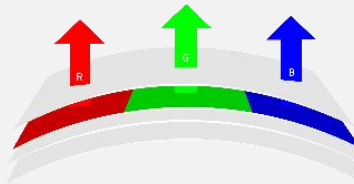
1. Introduction to AG and Sparkle

OLED IS BASED ON ORGANIC MATERIALS WHICH EMIT LIGHT SUBJECTED TO AN ELECTRICAL FIELD



Flexible

Foldable/Rollable



Light and Thin

Ultra-thin
screen

Fast Response

In microseconds

Wide Color Gamut

DCI-P3 100% coverage

Wide Temperature Range

-40°C~80°C

High Contrast

At least
1,000,000:1

Eye Friendly

Low blue light

1. Introduction to AG and Sparkle

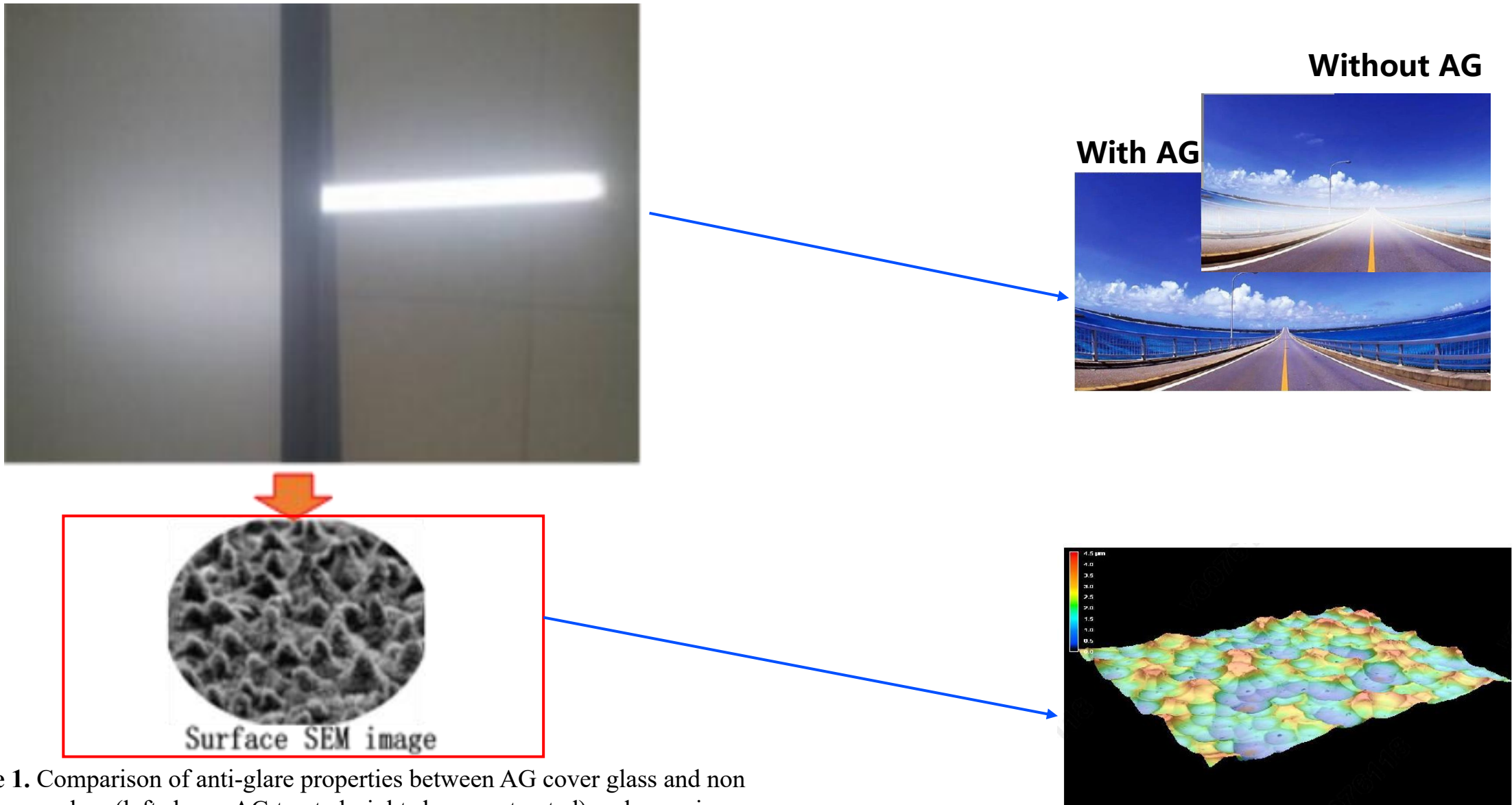


Figure 1. Comparison of anti-glare properties between AG cover glass and non AG cover glass (left shows AG treated, right shows untreated) and scanning electron microscope images of AG cover glass surface

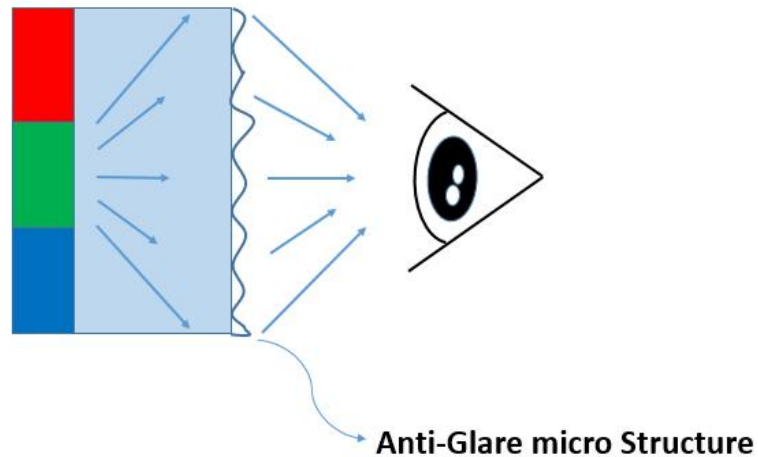


Figure 2. Schematic diagram of AG cover glass with glare microstructure

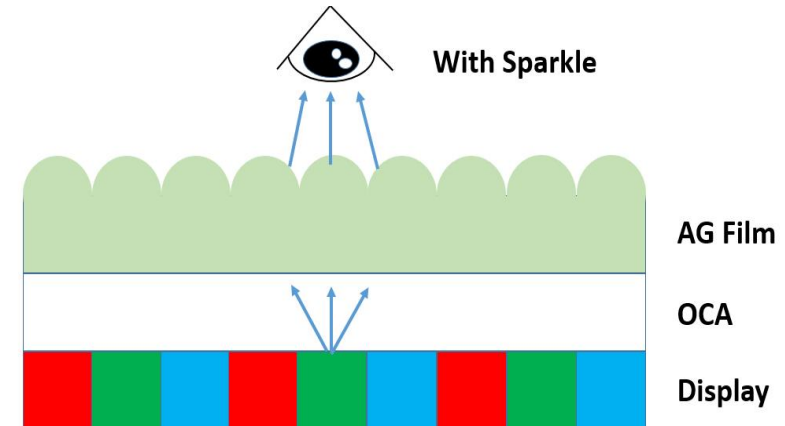


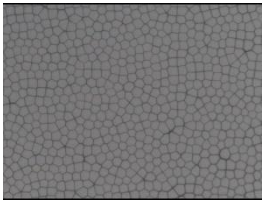
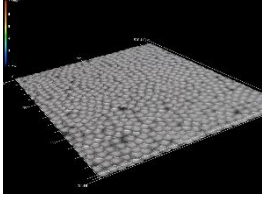
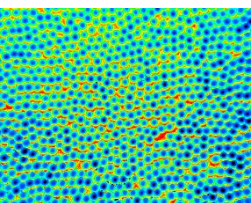
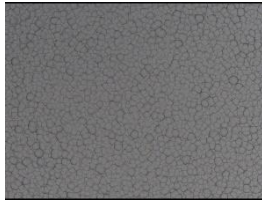
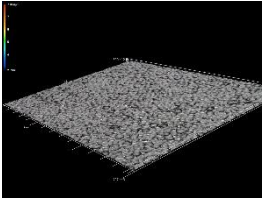
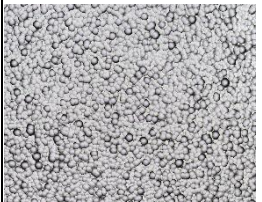
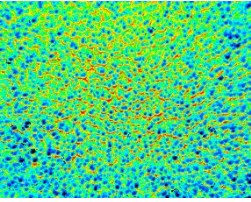
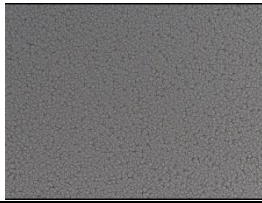
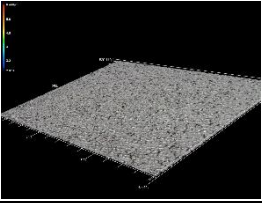
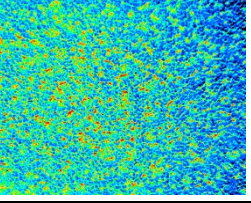
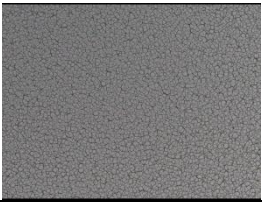
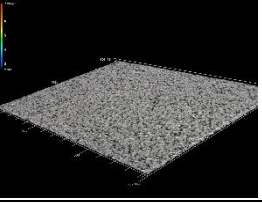
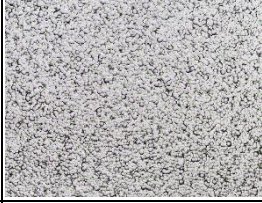
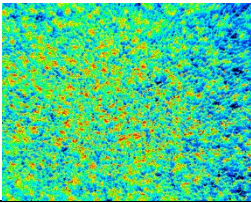
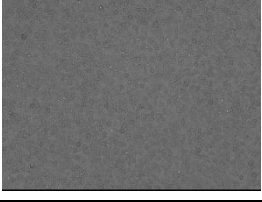
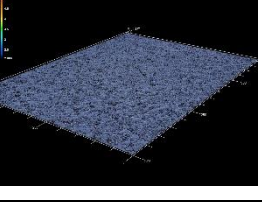
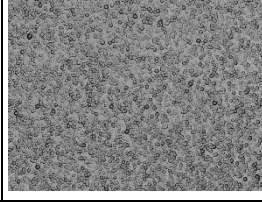
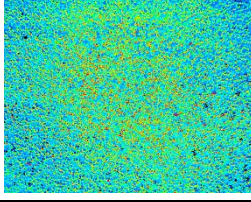
Figure 3. Schematic diagram of sparkle generation of AG

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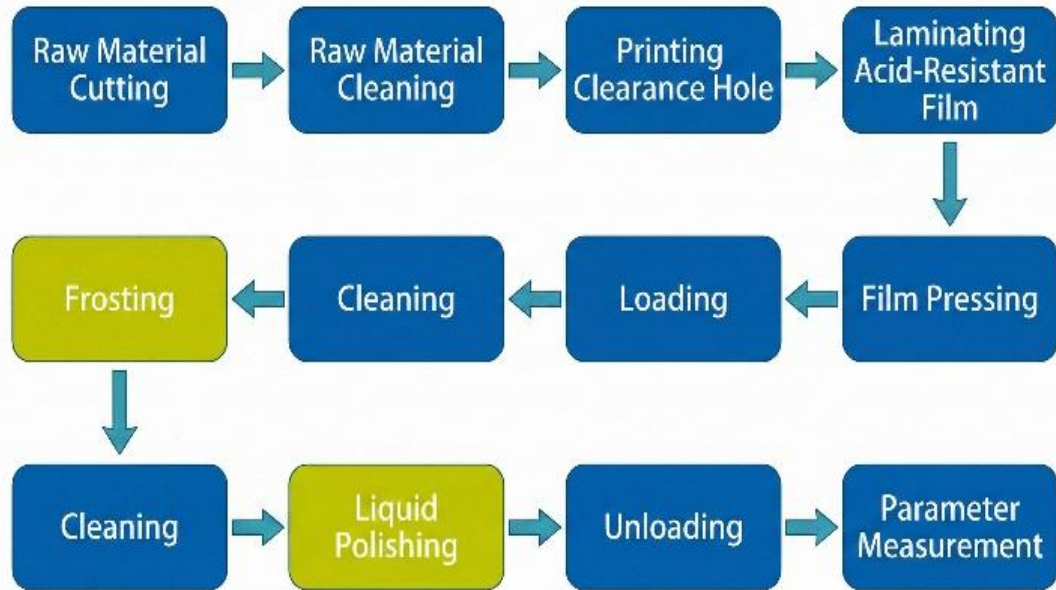
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2. Anti Glare Cover process and Light Diffusion Film

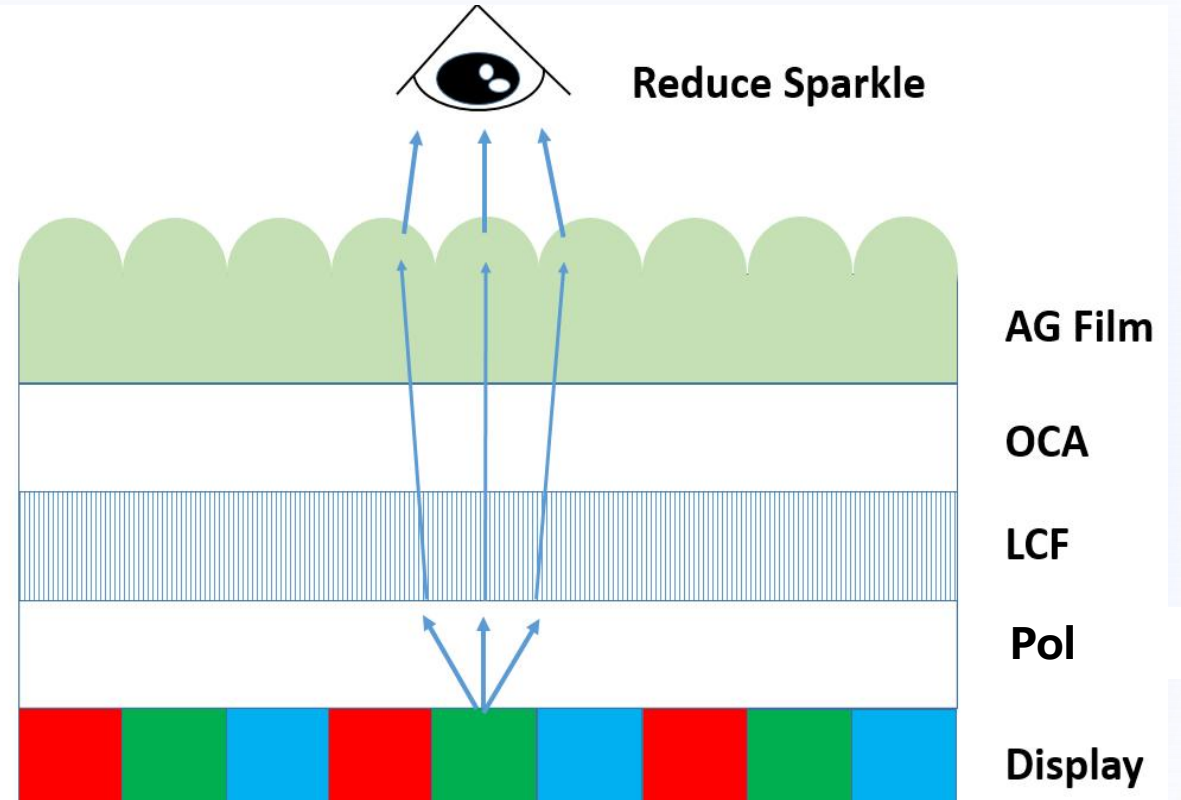
AG processing	Performance	SEM	Laser 3D	Laser Microscope+Height map		Particle Size	Depression depth	Instructions
Photolithography	Haze: 40.6% Ra: 0.504um Sparkle: 3.0 (254ppi)					1. 30.27um 2. 32.305um 3. 22.196um	1. 5.109um 2. 5.585um 3. 6.200um	➤ Pentagonal.The size differences between units are small and evenly. ➤ Good spark effect
Frosting etching	Haze: 44% Ra: 0.423um Sparkle: 8.2 (254ppi)					1. 19.254um 2. 22.797um 3. 8.838um	1. 6.018um 2. 6.719um 3. 1.989um	✓ Disordered structure ✓ The higher the haze, the larger the structure size ✓ depth difference is not significant ✓ The lower the haze, the smaller the sparkle
	Haze: 30% Ra: 0.261um Sparkle: 5.2 (254ppi)					1. 12.654um 2. 9.881um 3. 7.125um	1. 3.523um 2. 3.995um 3. 1.748um	
	Haze: 20.4% Ra: 0.239um Sparkle: 4.1 (254ppi)					1. 4.963um 2. 12.713um 3. 7.125um	1. 4.992um 2. 5.380um 3. 2.549um	
Abrasive blasting	NA					1. 5.792um 2. 7.489um 3. 10.236um	1. 3.049um 2. 3.355um 3. 2.589um	✓ The structure is a circular pit ✓ relatively uniform size distribution

2. Anti Glare Cover process and Light Diffusion Film *Visionox*

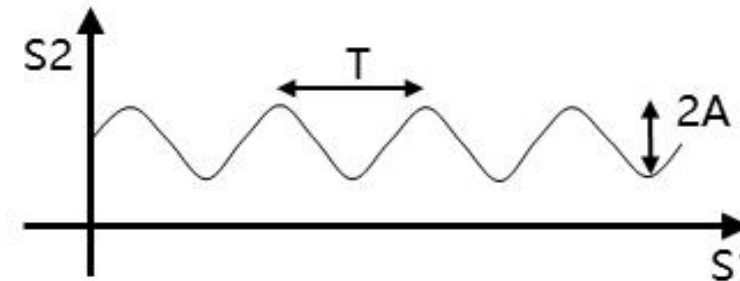
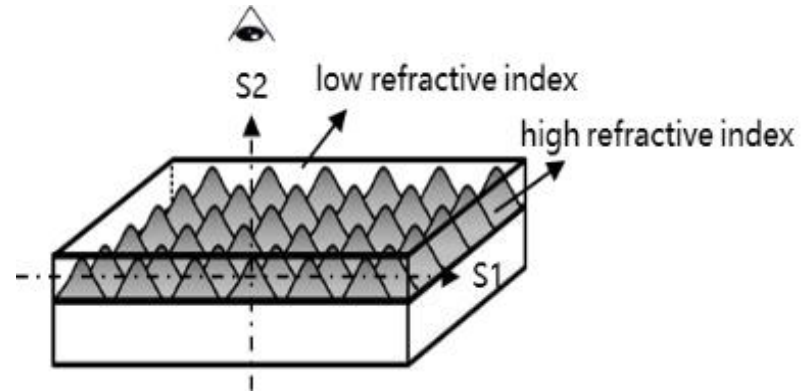
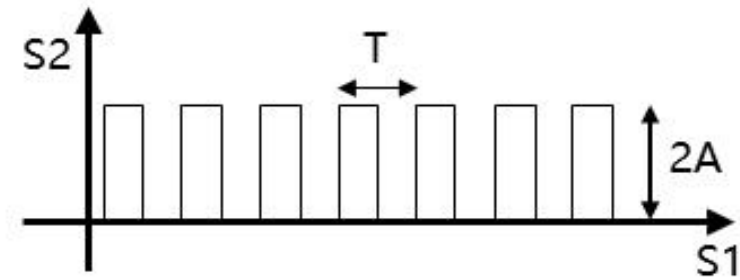
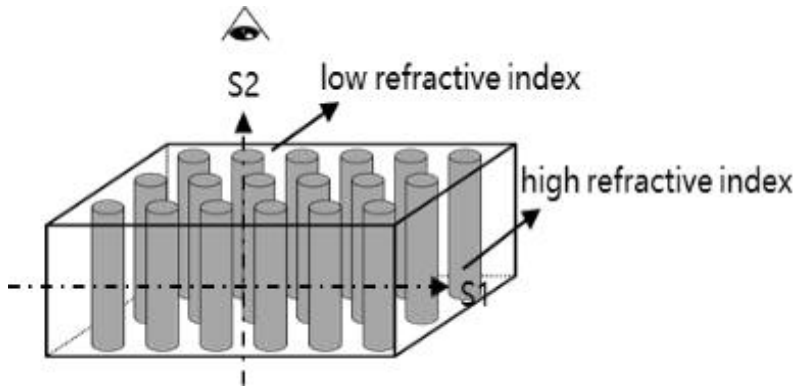
Solution 1 : AG treatment



Solution 2 : Module Stack Design



2. Anti Glare Cover process and Light Diffusion Film *Visionox*



2. Anti Glare Cover process and Light Diffusion Film *Visionox*

Split	CG(3A)	CG(3A) with LDF Sparkle Improvement Ratio	Specifications
1#	5.33-5.85	~67%	Haze20% Ra0.25μm
2#	4.59-5.01	~69%	Haze30% Ra0.25μm
3#	5.81-6.30	~63%	Haze30% Ra0.35μm
4#	4.51-5.01	~61%	Haze40% Ra0.35μm
Visual Effect	Severe Sparkle	Imperceptible(<3)	/



Anti Sparkle



W/ Sparkle

2. Anti Glare Cover process and Light Diffusion Film *Visionox*

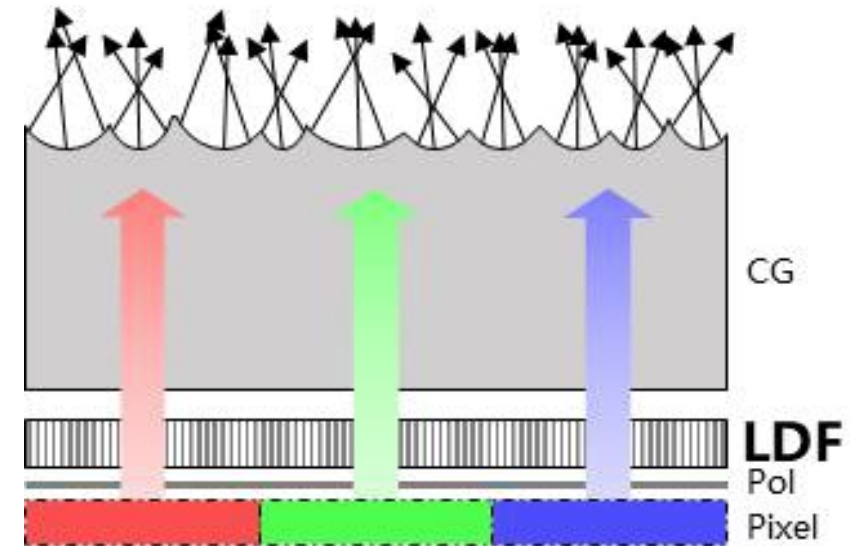
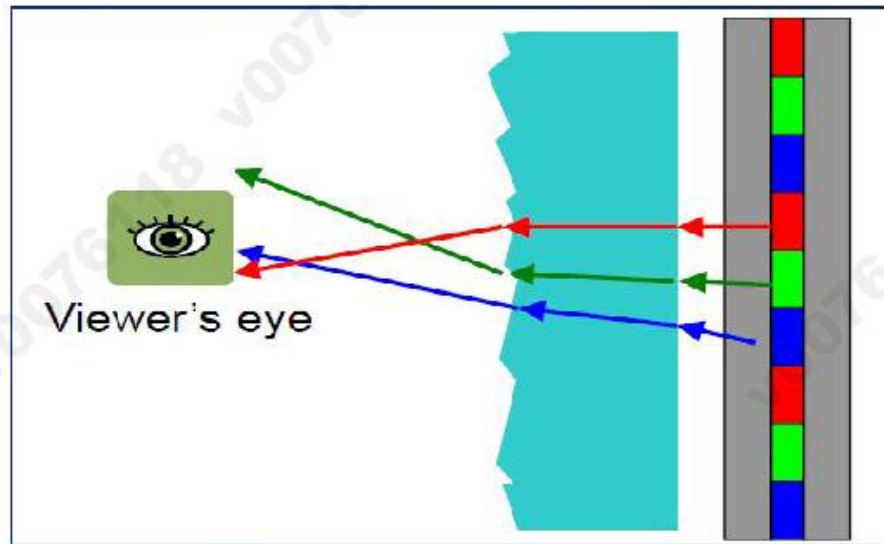
Split	1#	2#	3#	4#
Grating Type	Rectangle	Rectangle	Sinusoidal	Sinusoidal
Process	UV Alignment	UV Alignment	Mold embossing	Mold embossing
T(pitch)	5 μ m	2 μ m	8 μ m	8 μ m
Sparkle	2.39	2.34	3.40	3.60
Haze	87%	78%	54%	34%
Visual Evaluation	Slight Sparkle	Slight Sparkle	Serious Sparkle	Serious Sparkle

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Take-home message



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