

EOC 325低溫製程用感光性絕緣 及保護層光阻

研發二部

2017/04/25

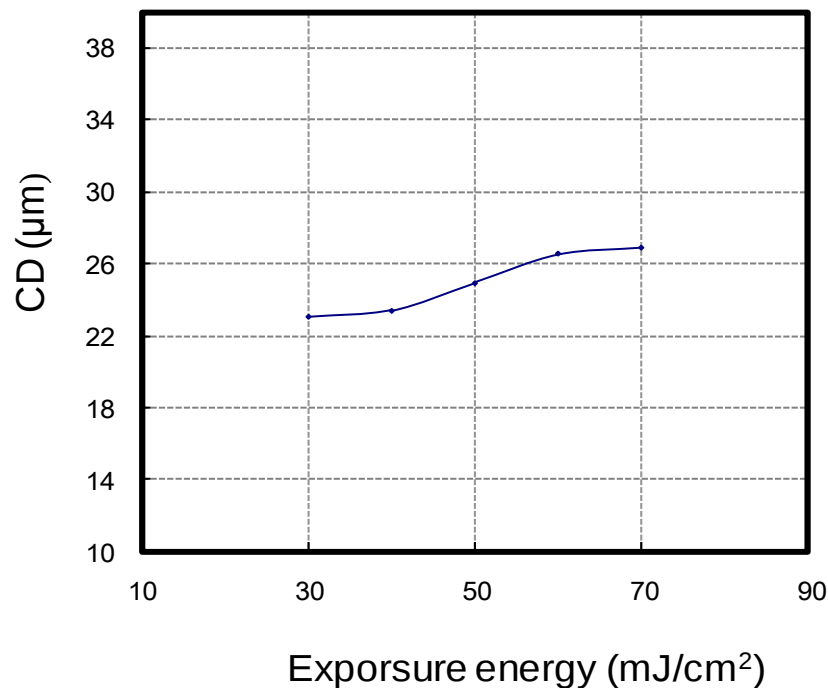
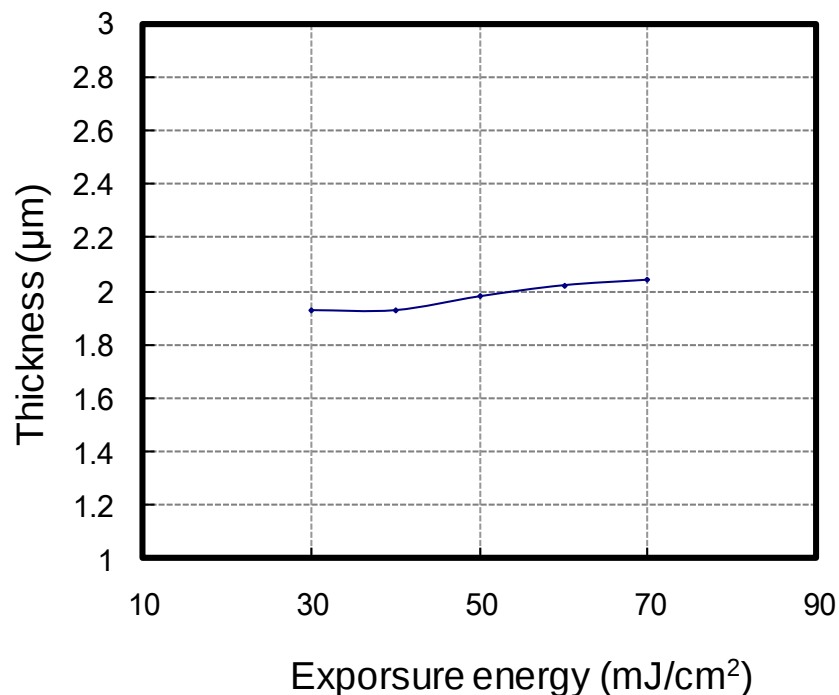
Properties

<i>Transmittance value</i>	<i>>95 % (400 nm)</i>
<i>Film thickness</i>	<i>2.0 μm</i>
<i>Surface hardness</i>	<i>F (weight: 750 g)</i>
<i>Develop ability</i>	<i>No defect and residue</i>
<i>Solid content</i>	<i>16.0 %</i>
<i>Viscosity</i>	<i>2.7 cP</i>
<i>Surface resistance</i>	<i>$>10^{14}$</i>

Recipe

<i>Target thickness</i>	<i>2.0 μm</i>
<i>Pre-bake</i>	<i>90 °C $\times$ 100 sec. (hot plate)</i>
<i>Exposure (broad band)</i>	<i>45 mJ/cm² (I line), gap = 280 μm</i>
<i>Development</i>	<i>23.0 °C, 90 sec. (spray), 0.03% KOH</i>
<i>Rinse</i>	<i>Running DI water, 30 sec.</i>
<i>Post-bake</i>	<i>140 °C $\times$ 30 min. (oven)</i>

Exposure Window



Thickness: 2.0 μm

Pre-bake: 90 °C × 100 sec. (hot plate)

Exposure: 30 ~ 70 mJ/cm² , gap = 280 μm

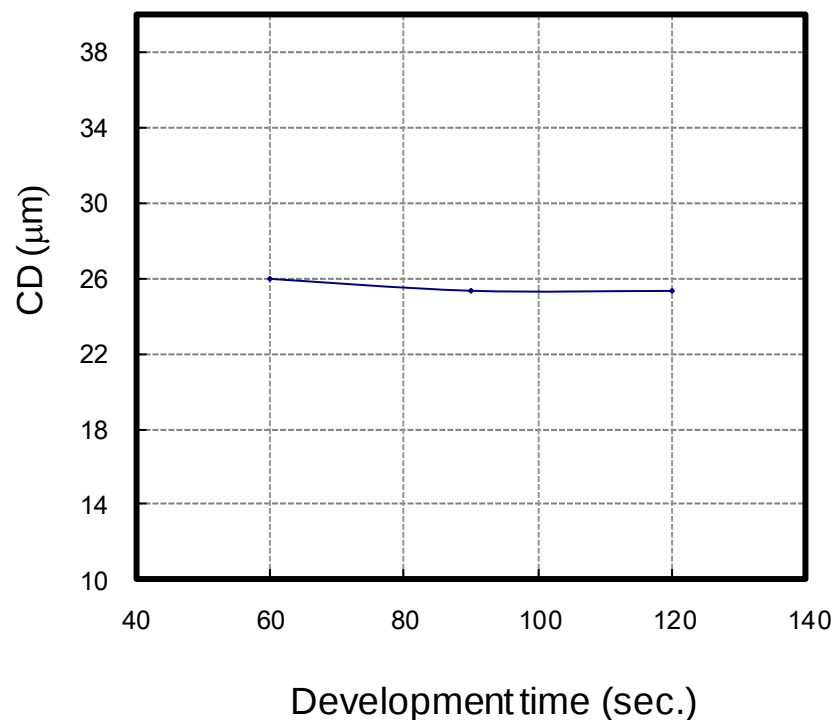
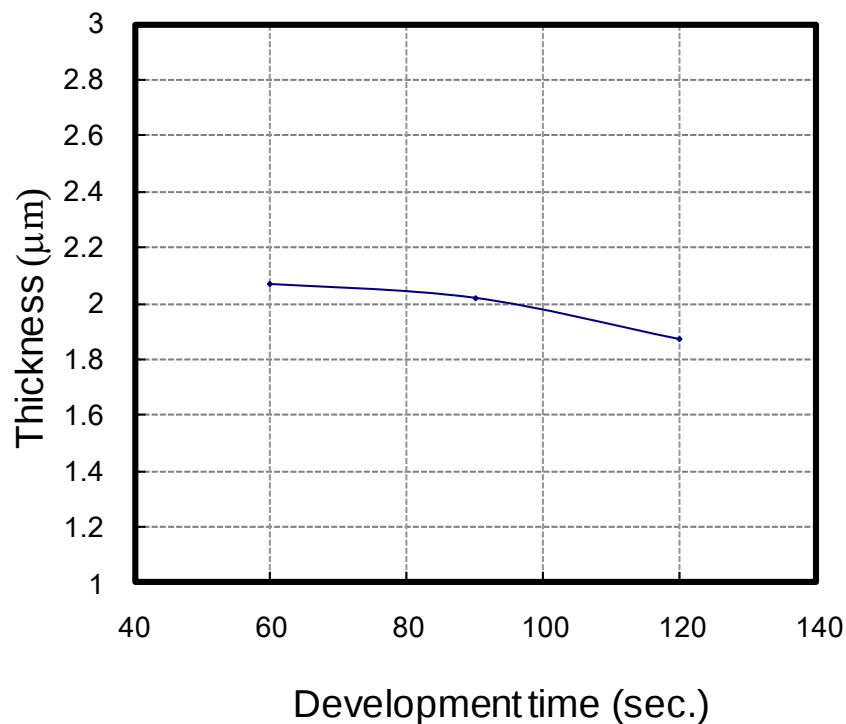
Development: KOH 0.03 %, 23.0 °C (spray)

Post-bake: 140 °C × 30 min. (oven)

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Development Window



Thickness: 2.0 μm

Pre-bake: 90 °C × 100 sec. (hot plate)

Exposure: 45 mJ/cm² , gap = 280 μm

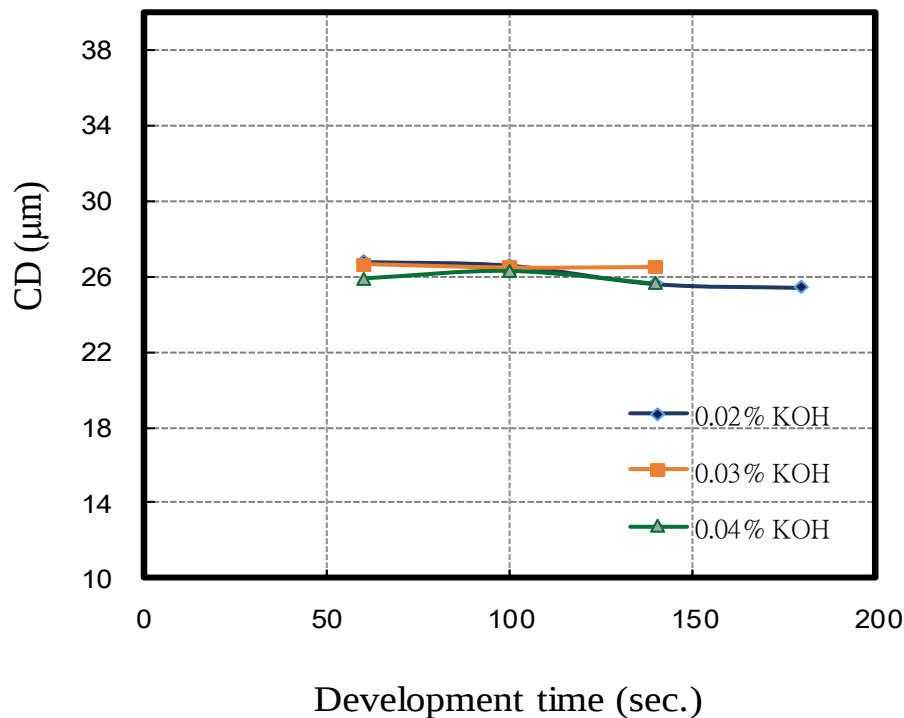
Development: KOH 0.03 % , 23.0 °C, 60 ~ 120 sec.(spray)

Post-bake: 140 °C × 30 min. (oven)

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顯影液濃度測試



Thickness : 2.0 μm

Pre-bake : 90 $^{\circ}\text{C}$ $\times$ 100 sec. (hot plate)

Exposure : 45 mJ/cm^2 , gap = 280

Development : **KOH 0.02 ~0.04 %** , 23.0 $^{\circ}\text{C}$ (spray)

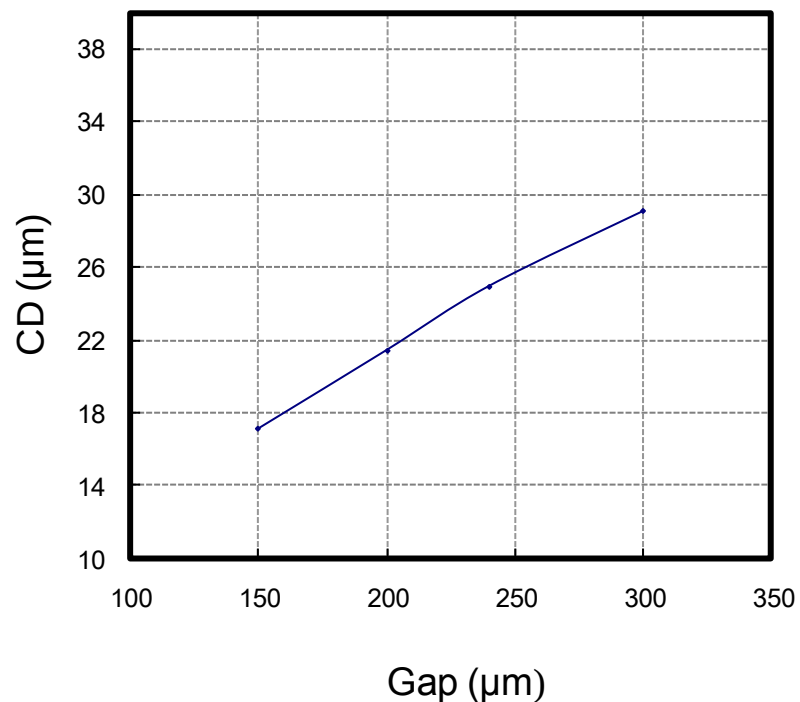
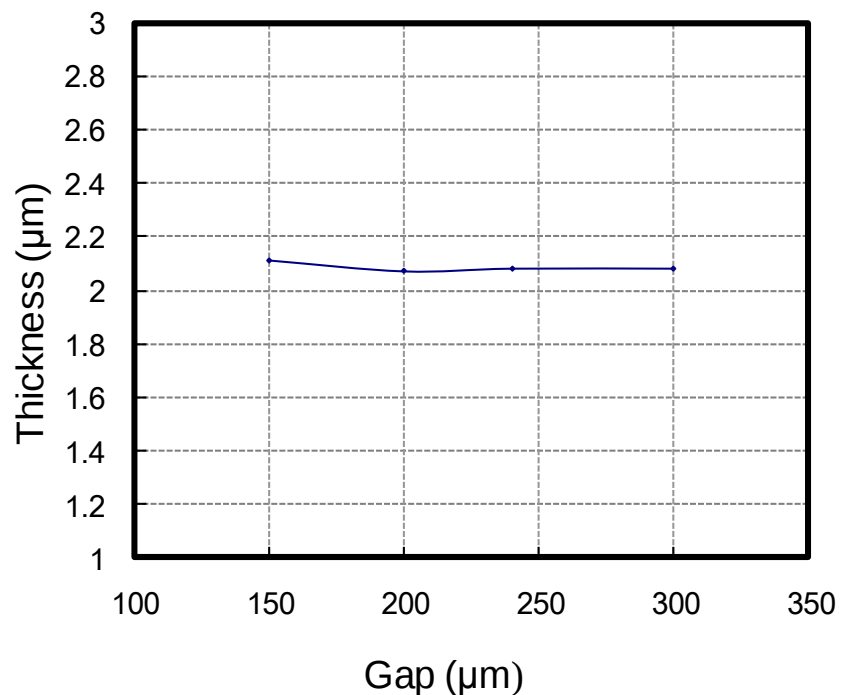
Post-bake : 140 $^{\circ}\text{C}$ $\times$ 30 min. (oven)

EOC 325在0.02~0.04% KOH濃度下皆可顯影

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Gap Window



Thickness : 2.0 μm

Pre-bake : 90 °C × 100 sec. (hot plate)

Exposure : 45 mJ/cm² , **gap = 150 ~ 300 μm**

Development : KOH 0.03 % , 23.0 °C (spray), 90 sec.

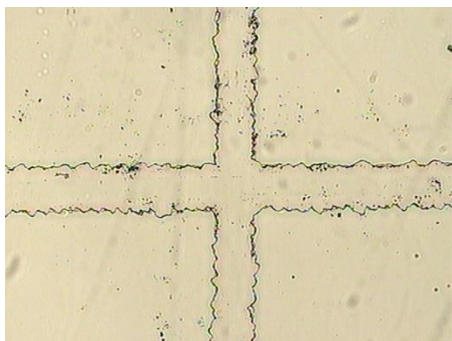
Post-bake : 140 °C × 30 min. (oven)

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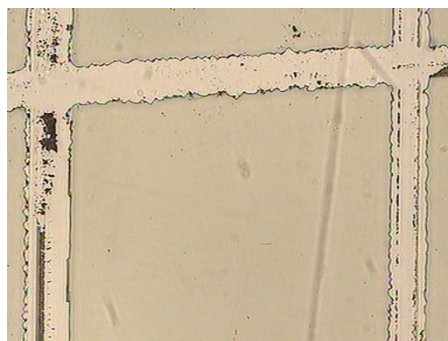
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Adhesion Test on Various Substrates

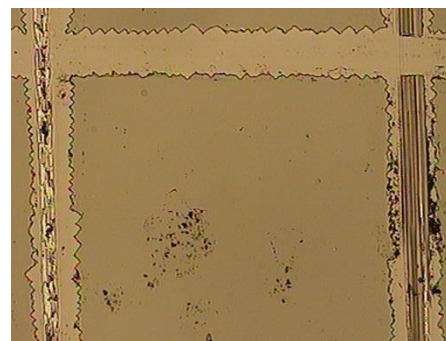
	EALGLE XG	ITO	Mo-Al-Mo
Ultrasonic	5B	5B	5B



ITO



TN-CS

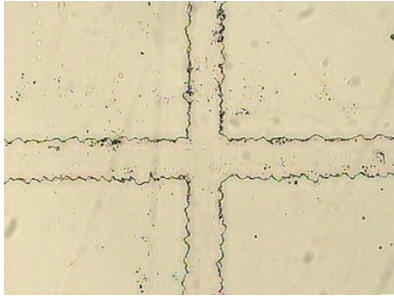
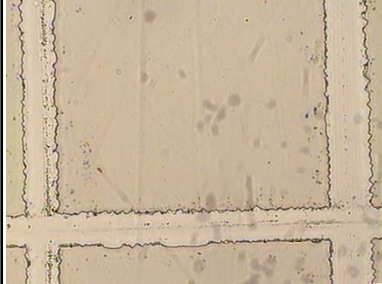
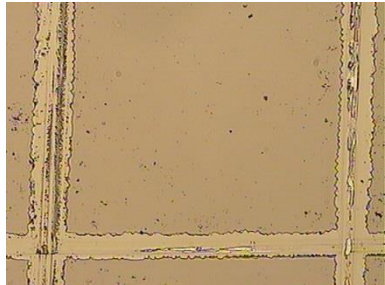


Mo-Al-Mo

1. Process: Coating → Pre-bake → Exposure → Development → Post-bake → Cross-Cut → Tester and taped.
2. Thickness : 2.0 μm

Reliability Test

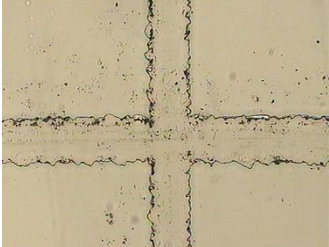
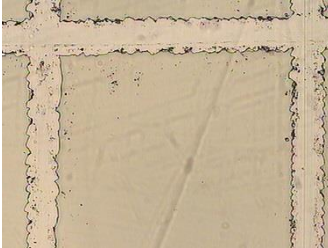
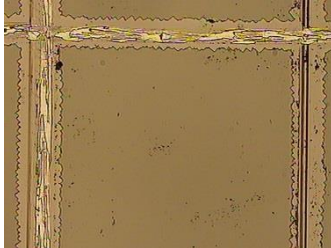
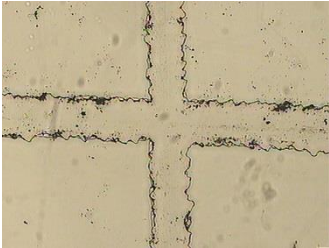
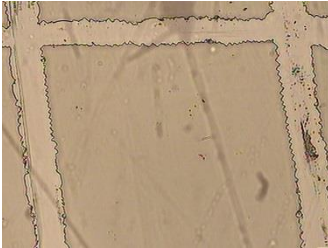
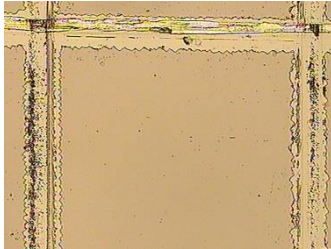
Ultrasonic test

	EALGLE XG	ITO	Mo-Al-Mo
Ultrasonic	 5B	 5B	 5B

1. Process: coating → pre-bake → exposure → development → post-bake → reliability test → cross-cut
2. Condition of Ultrasonic test: 25 °C, 20min.

Reliability Test

Chemical Resistance

	EALGLE XG	ITO	Mo-Al-Mo
Type 1	 5B	 5B	 5B
Type 2	 5B	 5B	 5B

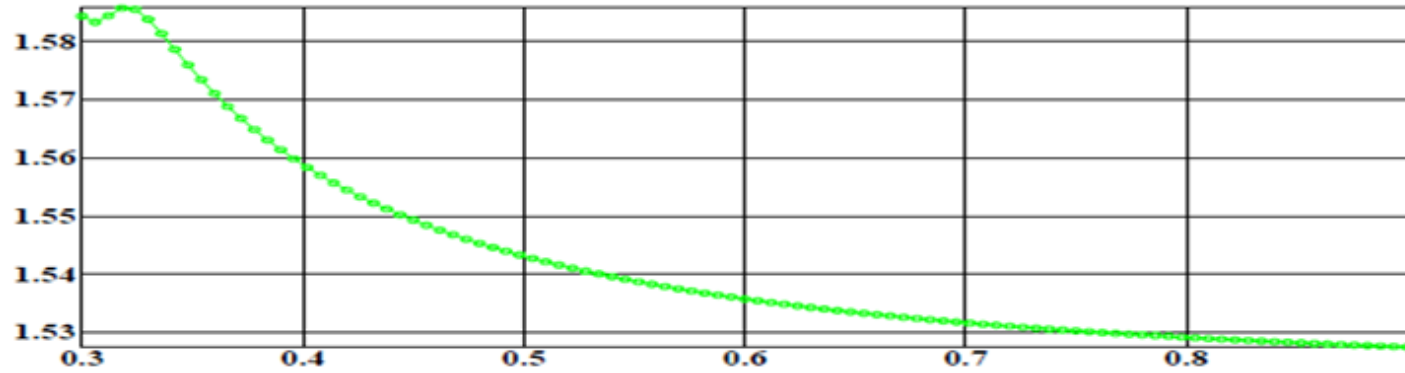
1. Process: coating → pre-bake → exposure → development → post-bake → reliability test → cross-cut

2. Condition: Type 1. Aqua regia 40 °C, 160 sec. + N-300 60 °C, 120 sec.

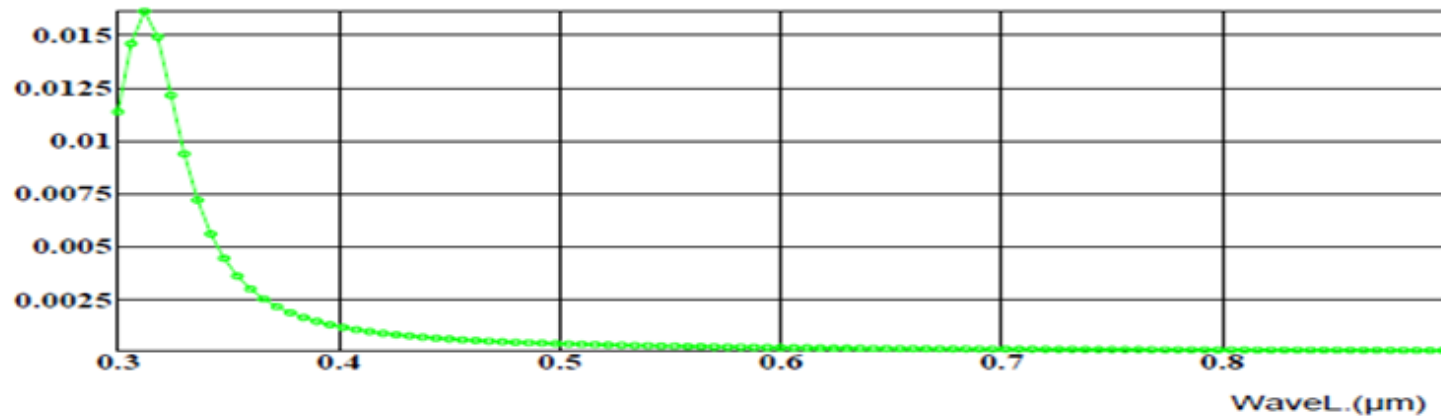
Type 2. Al acid 40 °C, 160 sec. + N-300 60 °C, 120 sec.

N、*K* value

N



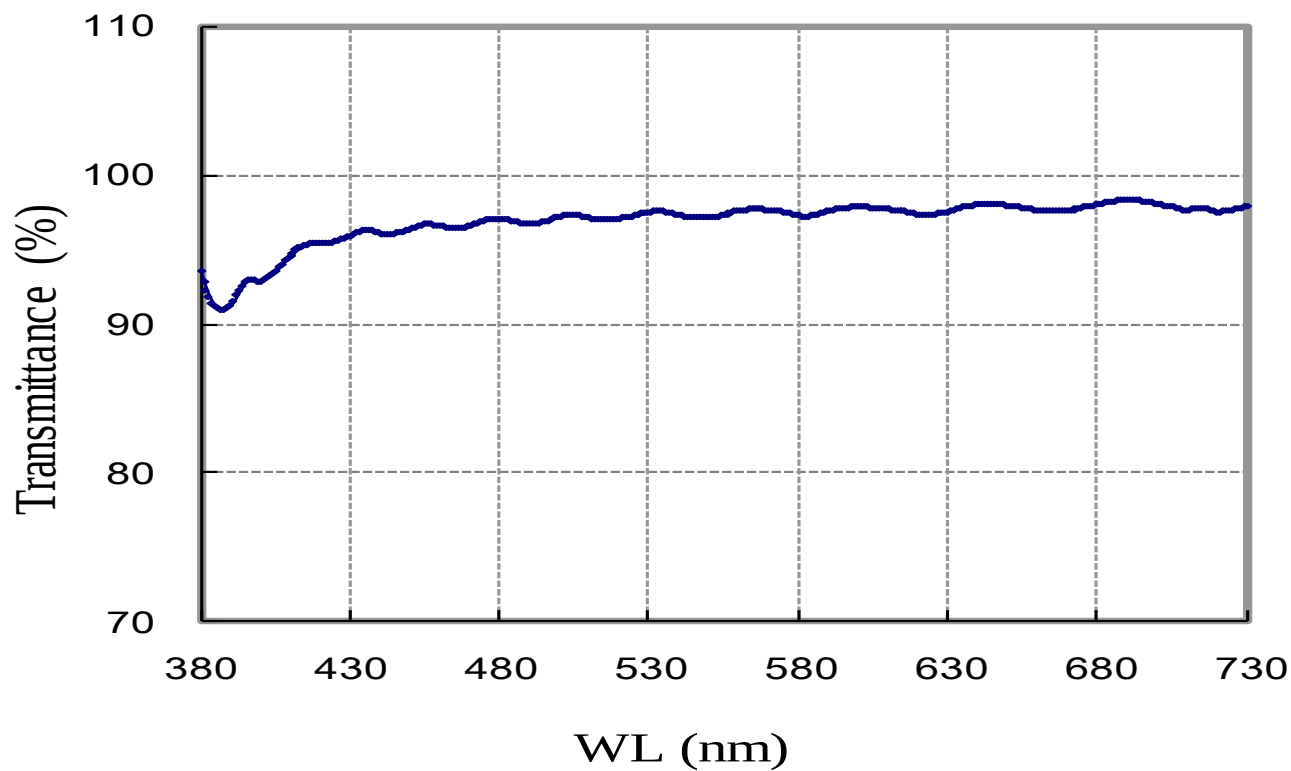
K



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Transmittance Spectrum



* Thickness : 2.0 μm