Human Power and Technology

NTT AT

News Release

February 5th, 2019
NTT Advanced Technology Corporation

The development and the sales launch of Solvent-free High Refractive Index Resin for Nanoimprint

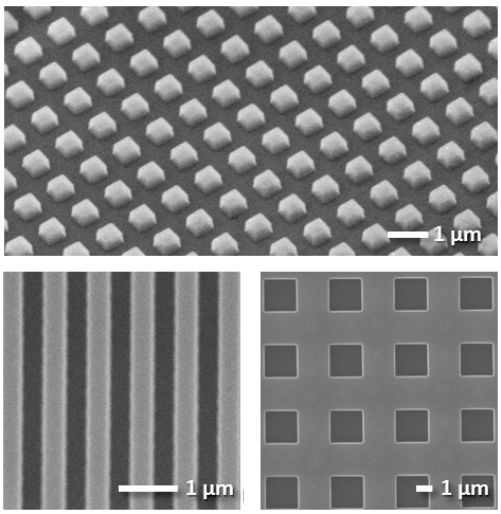
NTT Advanced Technology Corporation (NTT-AT, headquartered in Kawasaki-shi, Kanagawa, Japan; President and CEO George Kimura), has developed the new solvent-free high refractive index resin #18247 by taking advantage of the technology cultivated over years of making optical adhesives. Our company also plans to start selling it from April in 2019.

Until now, high refractive index resin for nanoimprint contained solvent, and a pre-baking process to evaporate the solvent was needed. However, # 18247 is solvent-free and can fabricate nano-size patterns without a pre-baking process.

This product will also be introduced, explained and displayed at the Photonics West 2019 exhibition in San Francisco from Tuesday, February 5th until Thursday, February 7th.

■Development History

The Refractive index adjustment technology is absolutely necessary to optical adhesive production, and NTT-AT has proceeded to move forward in the development of high and low refractive index resins. This product has achieved a higher refractive index keeping a high transparency by using non-organic fillers. Additionally, we worked towards making solvent-free nanofiller and were able to make the film thicker, which was impossible by conventional solvent-contained nanofiller. The new product will be able to answer various needs.



Nanoimprint patterns fabricated by #18247

■Features

#18247 doesn't require a pre-baking process after film formation compared to conventional solvent-contained nanoimprint resin, #18210. Also, #18247 has high transparency in visible light range.

■Applications

This new development enables you to choose the solvent-free type as a high refractive index resin for nanoimprint in addition to the solvent-contained type.

■Properties

Item		**Test method: Condition**	Unit	**#18247**
Uncured	Viscosity	E-type Viscometer: 25 °C	mPa・s	138
Curing Conditions		UV Flood Lamp at 365nm	-	100 mW/cm^2 1 min
Cured	Refractive Index	Prism Coupler: 25 °C	-	1.77 (403nm)
				1.70 (633nm)
				1.69 (848nm)
	Abbe Number	Prism Coupler: 25 °C	-	24
	Haze	Thickness: 50 μm	%	< 0.1
	T_g	Dynamic Viscoelastometer : $\tan\delta_{max}$	°C	125
	Transmittance	Thickness: 50 μm	%	95 (450nm)
				96 (540nm)
				97 (630nm)

■Exhibition

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