

August 30th, 2024
NTT Advanced Technology Corporation

A high-refractive index resin for nanoimprinting with excellent photostability has been developed

NTT Advanced Technology Corporation (NTT-AT, headquartered in Shinjuku-ku, Tokyo, Japan; President and CEO Tadashi Ito), has developed a resin for nanoimprinting with a refractive index of 1.9 and excellent photostability.

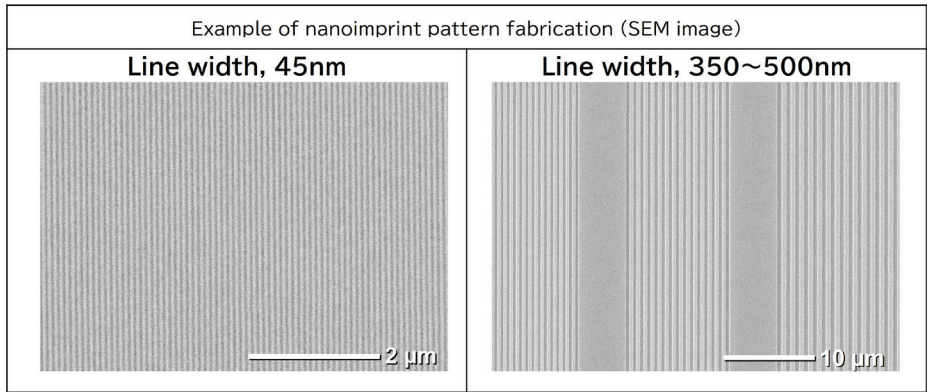
This newly developed resin has the same high transparency and good nanoimprintability*¹, and a uniformity of thin film formed by spin coating, as conventional products. In addition, it has excellent photostability which is superior to that of conventional products. This resin is expected to be applied to a wider range of optical device applications, such as AR/VR, which require reliability in the visible light range.

The details will be announced at the “ECOC Exhibition 2024” held in Germany from September 23rd, Mon. to 25th, Wed., 2024 (CEST/Central European Daylight Saving Time).

This newly developed resin is scheduled to be available from January 2025.

■Background to the development

In recent years, the UV nanoimprint process has been utilized to form optical devices such as waveguides for AR/VR. In particular, demand for nanoimprint resins with a high refractive index is increasing for the formation of microstructures to expand viewing angles, and so on. However, resins with a refractive index of 1.9 or higher have significantly lower photostability than resins with a refractive index of 1.8 or lower. In response, by optimizing its formulation using refractive index control technology cultivated over many years, NTT-AT has developed a nanoimprint resin that maintains its high refractive index and good optical properties while improving photostability, which has been an issue with conventional products.



Item	Developed product
Solvent	Contains
Viscosity	< 10 mPa·s
Applying process	1. Spin coat 2. Prebake 3. UV-cure
RI $\lambda=589\text{nm}$ (ref.)	1.908

■Features

It is possible to form nano-patterns with line widths of 45 nm to 500 nm by nanoimprinting with refractive index matching on a high refractive index glass substrate.

High light transmittance in the wavelength range of 400 nm to 800 nm.

■Applications

Nanoimprinting resin. Coating Agent

■Exhibition information

Exhibition name: “ECOC Exhibition 2024”

Place: Frankfurt, Germany

Date: September 23rd to 25th. 2024 CEST/ Central Europe Daylight Saving Time

Organizer: NEXUS MEDIA EVENTS Ltd.

Official site: <https://www.ecocexhibition.com>

*1 Technology for fabrication by pressing a nanometer-sized pattern mold against resin

* All company and product names mentioned herein are trademarks or registered trademarks of their respective companies.

* The data is current as of the date of publication. Please note that the information is subject to change without notice.

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