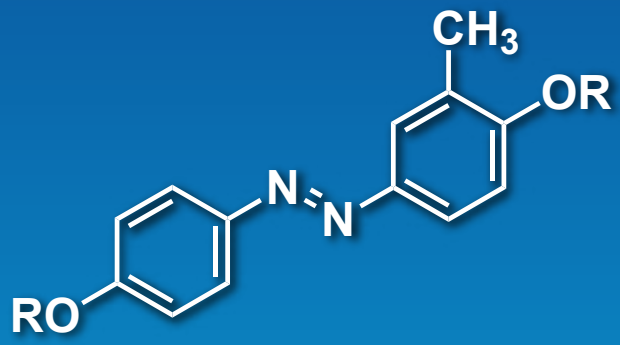
MATERIALS

Reusable Photosensitive Materials Showing Reversible Solid-Liquid Phase Transition



(Figures are provided by Advanced Industrial Science and Technology (AIST), Japan.)

R = C_6H_{13} 4,4'-Bis(hexyloxy)-3-methylazobenzene
500mg / 5g [B4596]

R = $C_{10}H_{21}$ 4,4'-Bis(decyloxy)-3-methylazobenzene
500mg / 5g [B4597]

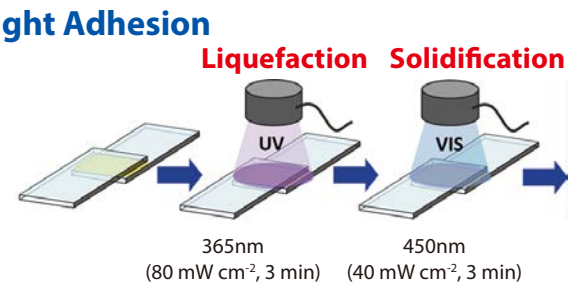
R = $C_{12}H_{25}$ 4,4'-Bis(dodecyloxy)-3-methylazobenzene
500mg / 5g [B4598]

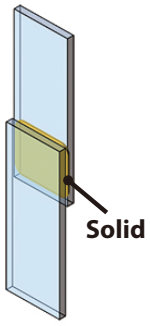
Advantage

Can be repeatedly liquefied from solid form by UV light and solidified from liquid form by visible light at room temperature

Application 1

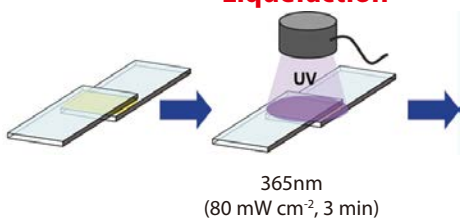
Light Adhesion



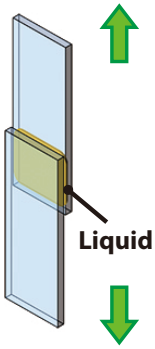


Two glass slides containing this material adhere to each other by irradiation with 450nm light. After phase transition, irradiation with 365 nm light reliquifies the material and breaks adhesion.

Light Non-adhesion



(provided from AIST)



These materials show a maximal adhesion value of 60 N cm^{-2} (0.6 MPa). B4598 (R=$C_{12}H_{25}$) exhibits the highest adhesion value.

Reference
Y. Norikane *et al., J. Photopolym. Sci. Technol.* **2016**, *29*. 149.
https://doi.org/10.2494/photopolymer.29.149

*These materials are under invention licenses by the Advanced Industrial Science and Technology (AIST), Japan.
If you intend to use these materials for industrial purposes, please contact us.

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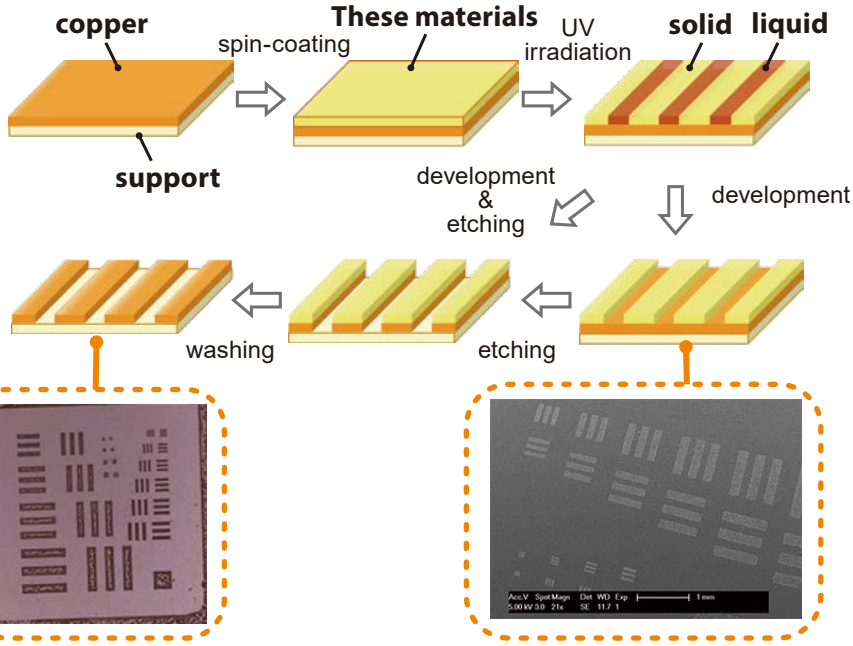
Application 2

Photoresist for lithography

These materials can be easily blown and washed-off, making them applicable to simple lithography processes.



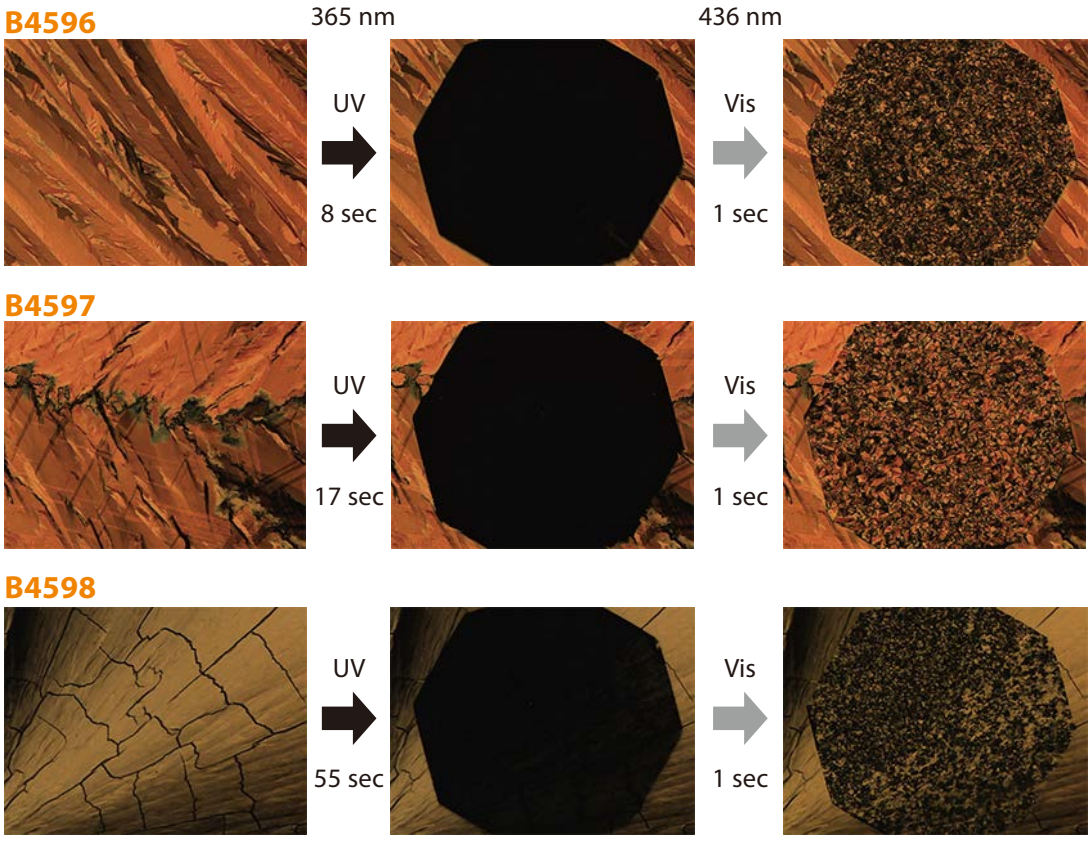
References

Y. Norikane *et al.*, *Org. Lett.* **2014**, *16*, 5012.
https://doi.org/10.2494/photopolymer.29.149

Y. Norikane, National Institute of Advanced Industrial Science and Technology, PCT Int. Appl. WO2013081155, **2013**.

(Figures are provided by AIST.)

Photoresponses of crystalline film in polarized light microscopy



***Each sample thickness is *ca.* 1 µm. Photoresponse time dependent on film thickness and light intensity.**

(Figures are provided by AIST.)

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