MATERIALS



# **Organic Non-linear Optical (NLO)** Material with **High Electro-optic Effects**



Electro-optic modulators exhibiting the electro-optic effect (EO) are typically used when converting electrical signals to optical signals within optical telecommunication networks. Additionally, organic non-linear optical (NLO) materials have attracted attention towards these applications due to their ability to break speed limits within devices using inorganic dielectric materials. The organic NLO material NEO-823 in particular shows high EO effects, and an organic EO polymer is preparable by blending NEO-823 into polymethylmethacrylate (PMMA).

## **Physical Properties**

- Maximum absorption wavelength  $(\lambda_{max})$ : 823 nm
- Hyperpolarizability (β) : 1670 x 10<sup>-30</sup> esu
- Electro-optic coefficient (r) @1550nm (20wt% in PMMA host polymers): 75 pm/V

# **Research Applications**

- Ultra-high-speed optical modulation devices
- Terahertz radiation devices
- Highly-sensitive electric field sensors

T. Yamada, I. Aoki, H. Miki, C. Yamada, A. Otomo, Mater. Chem. Phys. 2013, 139, 699. https://doi.org/10.1016/j.matchemphys.2013.02.020 References A. Otomo, I. Aoki, H. Miki, H. Tazawa, S. Yokoyama, PCT Int. Appl. WO 2011024774, 2011.

This product has been commercialized under the instruction of Dr. Akira Otomo.

### **Related Products**

**DANS** (= 4-Dimethylamino-4'-nitrostilbene) MNA (= 2-Methyl-4-nitroaniline)

5g [D2505] 25q [N0529]

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