

## Synthesis and sensitization of naphthalene-contained oligomers for photothermoplastic information recording

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The oligomer of  $\beta$ -naphthylglycidyl ether and its co-oligomer with glycidylcarbazole are obtained by cationic polymerization from  $\beta$ -naphthylglycidyl ether. The sensitization of such oligomers by various sensitizer types is studied to attain optimum properties of holographic recording media.

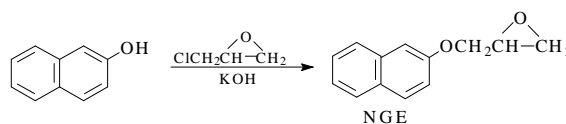
Катионной полимеризацией  $\beta$ -нафтилглицидилового эфира получен его олигомер, а также соолигомер с *N*-глицидилкарбазолом. Изучена сенсбилизация олигомеров различными типами сенсбилизаторов с целью получения эффективных сред для записи голограмм.

To produce photothermoplastic recording media (PTRM), derivatives of carbazole [1], anthracene [2], and other condensed polynuclear aromatic hydrocarbons [3], containing not least three aromatic cycles in molecule, i.e. conjugated systems of 14  $\pi$ -electrons and more are usually used. In [4], a possibility to obtain photoconductive low-melting layers based on oligomers of naphthylglycidyl ethers (ONG) and their application for photothermoplastic recording of optical holograms are shown. The intrinsic photosensitivity of naphthalene and its derivatives lies in the UV region. That is why sensitizers allowing to shift the photosensitivity spectral maximum of the layers to the visible range are to be incorporated into the polymer matrix.

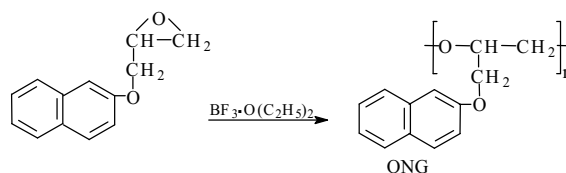
In this work, various groups of the sensitizers [5, 6] were used: a) sensitizers providing the structural sensitization of photoeffect [7] in organic polymer photoconductors and forming donor-acceptor charge transfer complex with oligomers; b) sensitizers with intramolecular charge transfer [6], increasing the oligomer photosensitivity within the intrinsic absorption range of that sensitizer; c) optical sensitizers, defin-

ing photosensitivity of the composition with the oligomer within the absorption band of the sensitizer (dye stuff).

Naphthylglyzydyd ether (NGE) was synthesized by the interphase catalysis in heterogeneous system described in [8].



NGE is a white crystalline solid having m.p. 59–60°C. This monomer is polymerized by both anionic and cationic mechanisms. The cationic polymerization of  $\beta$ -NGE described in [9], was carried out at room temperature in dry toluene by using etherate of boron trifluoride as initiator.



At the same conditions, glyzydydcarbazole (CGC) was obtained and the optimum