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BRANCHED CARBAZOLYL CONTAINING OLIGOMERS FOR RECORDING THE OPTICAL INFORMATION

Oligomers are one of the most perspectives and at the same time not enough studied type of the high-molecular compounds. Among them the oligomers which have photoconductivity are most interested since they can be used as recording media for photothermoplastic techniques. It is known that carbazole containing oligomers are widely employed in electro photography and holography as recording media (RM). The present paper describes the example of synthesize and study of the new carbazolyl- containing oligomers both linear and radial structure which have silicon or germanium atoms in the centers of branch. The synthesized oligomers were tested in condition of photothermoplastic technique which helped to find connection between oligomer's molecular structure and informational characteristics of RM made on the base of mentioned oligomers. The photophysical and informational characteristics of the photothermoplastic's holographic recording media on the base of the linear and radial oligomeric composites were examined and compared. The RM holography sensitivity depends on oligomer's degree of branching and increases with the growth of branch number. It was established that at the similar photoconductivity the diffraction efficiency of the holographic recording media basing on branched oligomers is higher as compared to their linear analogs. This makes it possible to assume that rheological properties of recording media have the first-priority influence on the holography properties over the photoconductivity.

Key words: carbazolyl-contaning oligomers of the linear and radial structure, photothermoplastic's properties, photoconductivity, holographic media.