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摘要: New terahertz (THz) optical devices which can control the optical properties of THz waves are needed to broaden the application area of THz technology. Liquid crystals (LCs) are very attractive materials for developing such devices because they have outstanding properties such as sensitivity to applied electric fields, chemical stability, relatively large birefringence and moderate absorption in the THz range. LCs need to be optimized to have a large birefringence and small absorption in the THz range. In this paper, we have investigated optical properties of a set of LCs in the THz range: E7, BL037, and RDP-97304. Optical parameters for the ordinary and extraordinary axis of LCs were acquired using THz time-domain spectroscopy and THz air-biased coherent detection system. We found that RDP-97304 has the largest birefringence and smallest absorption compared to E7 and BL037 in the THz range. It is thus a good candidate to design fast and efficient THz optical devices.
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