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论文

一种基于导模共振的电光调制器研究

袁文[1,2];聂义友[1,2];桑明煌[1,2];刘国栋[1,2]

1.江西师范大学物理与通信电子学院, 江西 南昌 330022; 2.江西省光电子与通信重点实验室, 江西 南昌 330022

摘要：

实验研究了基于导模共振的反射型电光调制器采用的棱镜耦合方式，在棱镜上面镀有4层膜，依次为银膜下电极-极化聚合物-缓冲层-金膜上电极。对这种衰减全反射（ATR）型的聚合物波导电光调制器进行了视频调制实验，采用静态偏置电压稳定模式同步角方法，结合对入射激光束进行监测，解决了视频调制中激光器噪声对模拟信号调制影响的问题，提高了工作稳定性。实验结果表明：该电光调制器具有良好的线性和较高的灵敏度。

关键词： 导模共振 极化聚合物 电光调制

Investigation of electro-optic modulator based on guide mode resonance

YUAN Wen[1,2];NIE Yi-you[1,2];SANG Ming-huang[1,2];LIU Guo-dong[1,2]

1.Institute of Physics and Communication & Electronics, Jiangxi Normal University, Nanchang 330022, China; 2. Key Laboratory of Optoelectronic & Telecommunication of Jiangxi Province, Nanchang 330022, China

Abstract:

A guide-mode resonance based electro-optic modulator, which consists of a coupling prism with 4 layers of film coated, was developed. These 4 layers are metal layer, poled polymer, buffer polymer, bottom electrode. The polymer waveguide electro-optic modulator capable of attenuating total reflection was tested in the transmission of the video. A new method was proposed to stabilize mode angle with the static bias voltage. The effect of the laser noise on the analog signal modulation during the video modulation is eliminated by monitoring of incident laser beam. The operation stability was improved. The experiment results show that the electro-optic modulator has fine linearity and high sensitivity.

Keywords: guide mode resonance poled polymer electro-optic modulation

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作者简介:

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