Análisis de modulación óptica externa en dispositivos semiconductores [

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text (article)

Analítica

This paper presents an exploration of different scientific and technological research applied to the field of communications, in which two techniques of external optical modulation were analyzed: in phase and in amplitude, which are concerned with modulating the optical carrier signal externally to the semiconductor laser of the transmitter, in order to base the physical behavior of these modulators, their basic parameters (transmission index, reflection, absorption), their spectral composition and the luminous intensity generated by the laser at a constant time (wave laser keep going). Thanks to this it was possible to establish the differences, advantages and disadvantages of the two types of external optical modulation and finally it was identified that the external optical modulation in amplitude, is the most efficient technique since it does not present distortion, it transmits a greater power, it transfers a large amount of information in very short periods of time, does not generate losses and is not affected by the phenomenon of chromatic dispersion in the optical fiber. However, if the crystal is replaced by graphene, it improves the modulator response but limits its operation to a near-infrared wavelength, therefore, it is concluded that when using other materials of semiconductor nature, it expands the study of optical modulation, and employability varies by application and approach
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