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Improvement in Electroabsorption and the Effect of the Electric Field in the Tuneable Wavelength Converter

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Abstract: The numerical results of the study of a novel wavelength converter which can be tuned with the application of an external field are presented. For this device, exciton binding energies, radiuses and the absorption coefficient are numerically analysed as a function of electric field. We showed that the interband transition energy and the overlap function between electron and hole changes abruptly when an electric field is applied. This phenomenon can be used the increase the change in the absorption coefficient and reduce the on-state transmission loss in electroabsorption modulators.

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