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Giant band gaps in photonic heterostructures obtained by calculation of the group velocity RAUL ARCHULETA-GARCIA, JESUS MANZANARES-MARTINEZ, Departamento de Investigacion en Fisica de la Universidad de Sonora — In this work we show that is possible to design photonic heterostructures with giant frequency ranges of low transmission by calculation of the group velocity. A heterostructure is the union of two lattices characterized with distinct relation dispersions. We calculate the band structure of the complete heterostructure implementing the super cell technique in the wave plane method. Even if the heterostructure energy bands present a complicate structure, we discriminate the energy the pass (stop) bands region by the calculation of the group velocity. Our predicted pass (stop) bands are verified by the direct calculation of light transmission using the transfer matrix method.

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