Abstract Submitted
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The absorption and optical properties of nanocomposite systems[1]
IRINA BARIAKHTAR, Boston College, YURI DEMIDENKO, Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, VALERI LOZOVSKI, Taras Shevchenko National University of Kyiv, Ukraine — An approach to describe the excitation and propagation of the surface plasmon polaritons along the surface with the nanodiscs that are located above it is proposed. In the framework of the proposed approach, the dissipative function is calculated for the different geometry of the systems with the discs. The Fano-like antiresonance curves of absorption profiles have been obtained. The antiresonance absorption characteristics have been explained by the interaction between the surface plasmon polariton with the continuous spectrum and localized plasmon polaritons at the nanodisks or nanocylinders with the discrete spectrum. The localized plasmon polariton can be used, for example, in solar cells for absorbing and enhancement of the solar radiation. The obtained result is similar to the well-known Fano effect.

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