



Advances in OptoElectronics

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Research Article
The Subwavelength Optical Field Confinement in a Multilayered Microsphere with Quasiperiodic Spherical Stack

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Abstract

We study the frequency spectrum of nanoemitters placed in a microsphere with a quasiperiodic subwavelength spherical stack. The spectral evolution of transmittancy at the change of thickness of two-layer blocks, constructed following the Fibonacci sequence, is investigated. When the number of layers (Fibonacci order) increases, the structure of spectrum acquires a fractal form. Our calculations show the radiation confinement and gigantic field enhancement, when the ratio of layers' widths in twolayer blocks of the stack is close to the golden mean value.

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