Purcell effect in Tamm plasmon structures with QD emitter

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We study Tamm plasmon structure based on GaAs/$Al_{0.95}$GaAs distributed Bragg reflector covered by thin silver layer, with active area formed by InAs quantum dots. We have measured the spectral and angular characteristics of photoluminescence and performed theoretical calculation of the spontaneous emission rate (modal Purcell factor) in the structure by using *S*-quantization formalism. We show that for Tamm plasmon mode the spontaneous emission can be enhanced by more than an order of magnitude, despite absorption in metallic layer.

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