

The invention relates to technological means of production of optoelectronic devices, in particular photon crystals. Two-dimensional photon crystal includes silicon matrix with placed with period a air cylinders with radii R and passivating coating of silicon oxide with thickness d on surface of cylinders. Passivating surface coating has thickness $d = 0,04-0,42 (a - 2R)$. The invention provides increase of width of photon forbidden zone at preservation of strength of photon crystals