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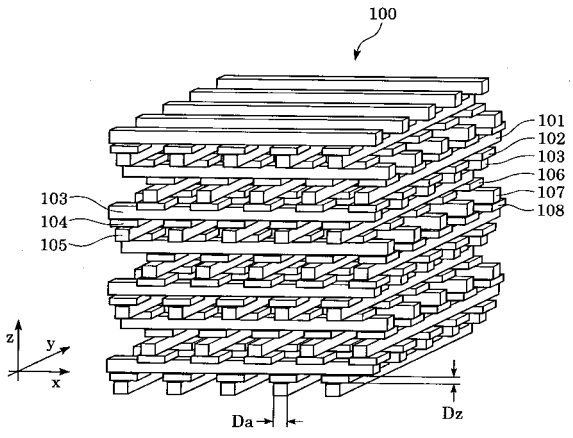
(54) **Three-dimensional periodic structure and functional element including the same**

(57) A three-dimensional periodic structure exhibiting a complete photonic band gap in a wide wavelength range and being readily produced, as well as a functional element including the same, is provided. In the three-dimensional periodic structure exhibiting a photonic band gap according to the present invention, layers composed of a plurality of columnar structures spaced at predetermined intervals are stacked sequentially with additional layers therebetween. Discrete structures contained in the additional layers are disposed at the positions corresponding to the intersections of the columnar structures, and the area of substantially all of the discrete structures is larger than the area of the intersection region of the above-described columnar structures.

FIG. 1A



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