

HOLLOW-CORE MICROSTRUCTURED FIBER RIBBON AND PREPARATION METHOD THEREOF

ABSTRACT

Disclosed is a hollow-core microstructured fiber ribbon and a preparation method thereof. The hollow-core microstructured fiber ribbon includes a plurality of hollow-core microstructured fibers arranged side by side. The plurality of hollow-core microstructured fibers have identical end-face structures and are coated with a ribbon-forming resin for fixing positions of the hollow-core microstructured fibers. A plurality of anti-resonant microstructured elements are distributed on an inner side of a glass capillary tube, an outermost coating are coated on the glass capillary tube, and the outermost coating has at least one pair of parallel positioning surfaces. Positioning surfaces of adjacent hollow-core microstructured fibers are aligned and spliced with each other, such that the plurality of hollow-core microstructured fibers arranged side by side are fixed in the ribbon-forming resin in a same orientation. In the hollow-core microstructured fiber ribbon provided by the disclosure, the hollow-core microstructured fibers are oriented by means of non-circular fiber coatings and are arranged side by side by means of parallel positioning surfaces, ensuring consistent orientations of the end-faces of all the hollow-core microstructured fibers in the fiber ribbon, thereby improving splicing efficiency and reducing splicing losses.

(Fig. 1)