

ABSTRACT

COOLING SLEEVE AND OPTICAL FIBER CATHETER HAVING SAME

The present disclosure proposes a cooling sleeve, which includes an inner tube with an optical fiber arranged therein, wherein the out wall surface of the optical fiber contacts with the inner wall surface of the inner tube to form several first contact portions extending in the axial direction, and the gaps from the adjacent first contact portions form first circulation channels axially; the inner tube is arranged within the outer tube, as such the inner wall surface of the outer tube contacts with the outer wall surface of the inner tube to form several second contact portions extending in the axial direction, and the gaps from the adjacent second contact portions form second circulation channels axially; Proximal ends of the first circulation channels and proximal ends of the second circulation channels are connected each other inside the proximal end of the outer tube via a forming cavity; Distal ends of the first circulation channels and distal ends of the second circulation channels are independently connected externally. The present disclosure also proposes an optical fiber catheter with the cooling sleeve. The design of the present disclosure is ingenious, leveraging the contact manners of the inner tube, the outer tube and the optical fiber to achieve coaxial self-arrangement-and-support among them.

Figure 1