

ABSTRACT

The optical fiber sensing method of the present invention includes steps of: joining heat shrinkable tubes to two ends of a sensing segment of an optical fiber; coupling a fixing element on the heat shrinkable tube below the sensing
5 segment; detachably connecting at least one floating element to the fixing element; placing the floating element into a fluid; and providing an input signal to the sensing segment and generating an output signal after the input signal is processed by the sensing segment, wherein the tensile force applied to the sensing segment would change with variation of the buoyant force upon the
10 floating element, resulting in change of the output signal. Accordingly, the optical fiber sensing method has numerous advantages, including rapid on-site construction, recyclability of components and changeability of design parameters.

15 Fig. 8 for publication