

Tapered multimode fiber sensor for salinity detection

ABSTRACT

A tapered multimode fiber as a salinity sensor was demonstrated. The sensitivity of the sensor could be enhanced by tapering the multimode fiber to a 10 μ m diameter size and 50mm of waist length. The tapered multimode fiber sensor was tested with the different concentration of sodium chloride (NaCl) which is diluted in the distilled water. The tapered multimode fiber sensor (TMFS) is easy to fabricate, compact, and simple. The sensitivity of the sensor achieved 0.1705 a.u/M. The findings demonstrated the capability of TMFS for salinity sensing and its potential application for detection of chemical sample.

Keyword: Tapered multimode fiber; Sodium chloride solution