

Abstracts

Fiber-Optic Instrument for Temperature Measurement

K. Kyuma, S. Tai, T. Sawada and M. Nunoshita. "Fiber-Optic Instrument for Temperature Measurement." 1982 Transactions on Microwave Theory and Techniques 30.4 (Apr. 1982 [T-MTT] (Joint Special Issue on Optical Guided Wave Technology)): 522-525.

A practical fiber-optic measurement instrument for temperature was constructed consisting of a small sensor responding to optical absorption change in a semiconductor, and a unique signal processing system with two different-wavelength light emitting diodes (LED's). The fiber-optic sensor with a semiconductor chip is quite small, very sensitive, highly reliable, and easy to manufacture at low cost. The most outstanding feature of this system is that it is free from optical-stray-loss. The accuracy of about $\pm 1^\circ$ and the response time of about 2 s were obtained in the temperature range from -10°C to 300°C .

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