

Optical tap by using bending fiber

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Abstrak

In signal transmission through an optical fiber, a bending fiber causes degradation of efficiency. Due to mode conversion and radiation loss. Considering a light power radiated from a bending fiber has a possibility to be utilized as detectable signal, it is proposed an optical tap by using bending fiber.

The study is devoted to design and construction of optical tap for fiber link, without any other optical element. The signal quality of the radiated light from optical fiber bending has been investigated in various angle of detection and in various radius of curvature. The result shows that the radiated signal has similar shapes of distribution of 20 degrees. And the bending loss increases if the radius of curvature decreases.

A trial of sending optical signal from one end of the fiber link shows a detected radiated signal from the bending point. It is predicted that the bending fiber can be applied as optical tap, instead of a source of power loss.