Abstracts

Optical Fiber and Preform Profiling Technology

W.J. Stewart. "Optical Fiber and Preform Profiling Technology." 1982 Transactions on Microwave Theory and Techniques 30.10 (Oct. 1982 [T-MTT] (Special Issue on Optical Guided Wave Technology)): 1439-1454.

A comprehensive review of state-of-tie-art optical fiber and preform index-profiling methods has been prepared. The advantages and disadvantages of the various approaches are discussed. Important parameters include measurement accuracy, resolution, simplicity, and the nondestructive features of some methods. Both optical and non-optical techniques have been treated. Resolution considerations probably favor the refracted near-field technique and this may be a decisive factor for the measurement of single-mode fibers. Simplicity of apparatus lies with near-field methods generally so that the bound near-field method is most often used for dimensioned measurements. Preform profiling is dominated by deflection function methods, usually accompanied by spatial filtering or focusing. Methods restricted to certain classes of fiber, such as the far-field approaches, are less attractive and, consequently, do not receive as much use.

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