Abstracts

The Birth of Lightwave Technology and Its Implications to Microwaves

W.S.C. Chang. "The Birth of Lightwave Technology and Its Implications to Microwaves." 1984 Transactions on Microwave Theory and Techniques 32.9 (Sep. 1984 [T-MTT] (Special Centennial Issue Historical Perspectives of Microwave Technology)): 1140-1143.

Ever since the invention of lasers in the late 1950's, the use of coherent optical radiation for communication and signal processing with multigigahertz bandwidth has been a major research goal in electron devices, microwaves, quantum electronics, and optics. In order to realize that goal, the key issues that need to be addressed include a) how to transmit optical radiation with low propagation loss and signal distortion, b) how to effectively interface optical devices with electronic devices, c) how to modulate, multiplex, switch, and detect optical radiation at such high data rates, and d) how to solve the materials and fabrication technology problems. In the early 1960's, research on optical communications was concerned primarily with transmission of laser radiation through the atmosphere and the pipes.

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