Spatial multiplexing of multimode fiber

In this study, we introduced the scheme of in-line spatial multiplexing for MMI sensors to improve the sensitivity without any complex fiber processing. A seven-core fiber (SCF), instead of the ...

In the case of transmission in a MMF, one of the key elements in the transmission system is the spatial multiplexer (MUX), capable of converting N SMFs into N spatial channels of the MMF, ...

After providing an overview of networking architectures, the benefits of spatial multiplexing for communication and switching are demonstrated. Receiver-based multi-input multi-output signal ...

To overcome this limitation, we propose a new sensing approach that maps the intermodal interference in spatial domain. We achieve this by sparsely sampling the fiber transverse mode field distribution ...

We demonstrate here that these basic concepts can be applied to optical transmission in multimode fiber, in a system using multiple lasers and multiple detectors.

This work demonstrates a 3D-printed photonic lantern that efficiently combines many multimode VCSELs into a single multimode fiber with low loss, preserving brightness and enabling ...

To verify the proposed scheme, the results of computer modeling, prototyping, and experimental studies of a fiber-optic path based on a 7-core optical fiber are presented and discussed.

In this research, we succeeded for the first time in the world in combining optical signals of different optical types (modes) by using a multi-core structure and optical coupling between three ...

It increases transmission capacity by multiplexing several data signals in the cores of multicore fibers (MCFs) or in the modes of multimode fibers (MMFs), in which case, it is often called mode-division ...

Multi-Mode Fiber (up to 15 spatial modes): "305-km Combined Wavelength and Mode-Multiplexed Transmission over Conventional Graded-Index Multimode Fibre," R. Ryf et al., ECOC 2014 PDP 3.5

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