

T. Yoshihiro, Y. Ono and T. Kasamatsu, "A wavelength insensitive, non-contact and highly efficient fiber optic connector using up-tapered multimode optical fibers," *Technical Digest of the Eighteenth Microoptics Conference*, Tokyo, 2013, pp. 1-2.

Abstract: A wavelength independent, non-contact and highly efficient fiber optic connector has been demonstrated. The connector consists of a pair of up-tapered multimode optical fibers. The insertion loss was measured to be 0.9 dB in the wavelength range from 410 to 790 nm. This novel fiber optic connector will find applications in multi-color illumination systems, where frequent plugging and unplugging of the connector are necessary.

keywords: {lighting;optical fibre couplers;optical fibre losses;insertion loss;multicolor illumination systems;up-tapered multimode optical fibers;wavelength 410 nm to 790 nm;wavelength insensitive noncontact highly efficient fiber optic connector;Connectors;Insertion loss;Lighting;Loss measurement;Measurement by laser beam;Optical fiber dispersion;Optical fibers},
URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6715133&isnumber=6715047>

J. Chandrappan, Z. Jing, N. R. Jie, P. Damaruganath and J. Lau, "A Pluggable Large Core Step Index Plastic Optical Fiber With Built-In Mode Conditioners for Gigabit Ultra Short Reach Networks," in *IEEE Transactions on Advanced Packaging*, vol. 33, no. 4, pp. 868-875, Nov. 2010.

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Abstract: Large core step-index plastic optical fibers (SI-POF) are bandwidth limited due to their high modal dispersion and coupling loss at the receiver. To date, the large core SI-POF are typically deployed up to 150 Mb/s applications. This paper reports the transmission of 2.5 Gb/s on 980 μ m core step-index plastic optical fiber with fiber-based mode conditioning elements that are part of the connector assembly. The built-in mode conditioners are tapered fiber tips that provide restricted mode launching at transmitter and mode filtering at the receiver side. The structures, at the tip of POF, are optimized by optical simulations and fabricated using laser fusion process. The connector assembly is realized by precisely encapsulating the mode conditioners with a metallic ferrule and positioned using optical grade epoxies. These plug-in modules are inserted to a typical SFP transceiver LC connector receptacle and characterized for gigabit rates.

keywords: {high-speed optical techniques;light transmission;optical fibre couplers;optical fibre dispersion;optical fibre fabrication;optical fibre losses;optical fibre networks;optical interconnections;optical receivers;optical transceivers;optical transmitters;SFP transceiver LC connector receptacle;bit rate 2.5 Gbit/s;built-in mode conditioners;coupling loss;gigabit ultrashort reach networks;high modal dispersion;laser fusion;mode filtering;optical fabrication;optical receiver;optical simulation;optical transmission;optical transmitter;pluggable large core step index plastic optical fiber;size 980 μ m;tapered fiber tips;Couplings;Optical coupling;Optical device fabrication;Optical fibers;Optical receivers;Optical transmitters;Bandwidth;modal dispersion;mode coupling;optical coupling;plastic optical fiber;short reach networks},
URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5580012&isnumber=5674140>