

Article Overview

Fiber optic cable technology patents cover innovations in cable structure, hybrid assemblies, modular trays, and sensing-enabled optical fibers.

Key Patents and Innovations

US9400362B2 describes a fiber optic cable designed for rugged handling while minimizing optical attenuation. The cable includes a rigid tube, an optical core with micromodules, and densely- and loosely-packed strength members to balance mechanical coupling and decoupling between the jacket and the optical core. Materials such as thermoplastic urethane, polyethylene, and polyvinyl chloride are used to enhance durability and flexibility, while the rigid tube provides structural support and compresses the strength members for improved mechanical performance . Panduit Corp. holds patents for hybrid optical fiber and copper conductor cable assemblies (Patent No. 10-215934) and modular fiber optic trays (Patent No. 10-215944). The hybrid cable integrates optical fibers and copper conductors in a single assembly, enabling industrial networking and high-speed data transmission. The modular tray allows flexible accommodation of different fiber optic modules, supporting multiple data rates (10-100 Gb/s) and facilitating upgrades in data centers . M2Optics, Inc. has been awarded patents in fiber optic technology, focusing on innovative cable designs and optical components, although specific patent numbers were not listed in the source . Advanced optical fiber patents include quantum dot-embedded holey fibers for light amplification and sensing, and active fibers with large mode field diameters for selective light mode generation. These fibers are designed to be resistant to environmental influences and can support distributed fiber optic sensing while simultaneously carrying communication signals .

Applications

- o Telecommunications: Long-distance and high-speed data transmission using low-attenuation, ruggedized cables.
- o Data Centers: Modular trays and hybrid cables enable flexible, scalable infrastructure for multiple data rates.
- o Industrial Networking: Hybrid fiber-copper assemblies support integrated communication and control systems.
- o Sensing and Monitoring: Quantum dot and active fibers allow chemical, thermal, and mechanical sensing along fiber paths. These patents collectively demonstrate the evolution of fiber optic technology toward more durable, flexible, and multifunctional systems, addressing both mechanical robustness and advanced optical performance.

US6160940A * 1997-06-05 2000-12-12 Corning Cable Systems Llc Fiber optic cable for installation in a

cable passageway and

An optical cable has a large bandwidth and is heavy and bulky compared to an existing copper cable and thus is very

In some applications, coupling between one or more optical fibers of a fiber optic cable and the jacket of the cable may increase

The patents are for a hybrid optical fiber and copper conductor cable assembly (patent No.10-215934) and

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OCC Patent Information This page is intended to provide notice under 35 U.S.C. § 287 (a) for the products and associated patents

One or more embodiments of the present invention provide an optical fiber cable production method and an optical fiber cable

An optical fiber cable includes: a sheath; a core that is housed in the sheath and comprises optical fibers; tensile strength members

An object of the present disclosure is to enable LPG applied over the entire length of an optical fiber without inhibiting an operation of

The invention generally relates to optical fibers, and, more particularly, to hollow-core optical fibers and cables for use

CROSS-REFERENCE TO RELATED APPLICATIONS This is a U.S. national phase under 35 U.S.C. 371 of

NIHF Inductee Robert Maurer invented optical fibers, which paved the way for the commercialization of optical fiber and created a

The present invention relates to an optical fiber cable, and more specifically, to an optical fiber cable having a slot rod with a

According to various embodiments, a cable includes a ribbon fiber having multiple optical fibers joined together and disposed within a

This data-file screens for the leading fiber optic companies and cable companies, based on 37,000 patents, technologies and revenues.

Fiber Optic Cable Patents

Optical fibers are used most often as a means to transmit light between the two ends of the fiber and find wide usage in fiber-optic

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