

Essay on Fiber Optic Communication

Introduction: from the very beginning of world civilization, this world has experienced three revolutionary changes. The first revolutionary change came through the advent of the agricultural system. The second came with the invention of the steam engine industrial revolution. The third one is the information revolution that conquered and linked all the corners of the world. Today, the world has become very small and integrated by the virtue of advanced communication systems and channels.

Origin of the fiber optic communication system: using light as a form of communication is by no means a recent development. One of the first forms of optical communication was using the fire and smoke signals. Technically speaking, a simple gesture such as waving your hand and comes under the preview of communication since it requires the presence of light performing the same gesture in a dark room will not evoke a response from the other party.

What is optical fiber: the optical fiber is a way for transporting light in fiber is essentially trapped within it because the core of the fiber has a higher reflective index than the cladding. As the optical signal traverses the fiber, it diminishes in power because of losses in the fiber.

The concept is starting forward and elegant, however, its implementation is by no means trivial but rather complex.

Spread of fiber optic communication: the fiber optic communication system is encircling the world very fast. The demand for optical fiber today is almost unimaginable. Fiber is being deployed worldwide at a rate of about 500 km per hour. The giant fiber manufacturers such as Corning and Lucent technologies are sold out of their fiber for the next 11 to 12 months. Data and voice traffic are increasing

at a rate of about 80 percent and 10 percent per year respectively.

Advantages of fiber communication: firstly, optical fibers are compact, lightweight and have the ability to transfer large amounts of information, second, optical fiber, be they silica-based glass or plastic, are insulators and therefore, have no currents flowing in them. As a result, fibers are immune to electromagnetic interference. Thirdly, the fiber system cannot be tapped without being detected. This degree of security is essential for systems transferring sensitive information such as national security and military issue. Fourth, another advantage of optical fiber is that they do not corrode.

Optical fiber communication and Bangladesh: like developed countries, there have been great strides in the progress of fiber optic technology in Bangladesh. The focus of research and development has evolved from reducing the losses in fiber to trying to perform all-optical networking, the holy grail of fiber optic communication. Fiber optics has found applications in telephone trunks, subscriber service, broadcast and cable TV, data communication, and sensors.

Conclusion: The above discussion shows that any country that lagged behind fiber optic communication means it's lagging behind modern science and technology. As Bangladesh has missed manipulating the opportunities of submarine cables, the people of the country must pay for this. Thus, our government should take a quick decision on the issue of the submarine cable; any delay to take decision may have to pay more.