

## **Single laser light source multi-channel PSK optical communication**

### **ABSTRACT**

Two light waves which have same wavelength and same plane of polarization can interact with each other and produce interference pattern only if the path difference between two waves is less than coherent length. It also means that if path difference is more than coherent length then waves will not create interference pattern or decoding of signal will not be possible. Using this property, it was demonstrated that more than one channel can be transmitted as long as the difference in their path lengths is more than the coherence length of the light source used. © 2006 Asian Network for Scientific Information

**Keyword:** Coherent length; Free space communication; Optical communication; Polarization maintaining fiber; PSK communication