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(57) Abstract :

ABSTRACT TITLE: AN OPTICAL SYSTEM FOR PHYSIOLOGICAL ACTIVITY MONITORING. The present invention provides a flexible polymer embedded in-line specialty fiber modal interferometer which can be used as optical sensor probe system for real time monitoring of physiological parameters like temperature and human mechanical motion. The interferometer is realized by splicing SCPCF section along SMF fiber for excitation and recombination of SCPCF modes that result in stable interference spectrum over the source spectrum. This interferometer is embedded in polymer and subjected to external displacements and strain. Due to mechanical motion of the sensor probe, the length of the SCPCF section alters resulting in shift in the transmission spectrum. In presence of dynamic field about the interferometer, the interference peak wavelength shifts periodically to provide signature of the external field.

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