

Title (en)

FIBER OPTIC SYSTEM WITH SIMULTANEOUS SWITCHING AND RAMAN

Title (de)

FASEROPTISCHES SYSTEM, DAS GLEICHZEITIG SCHALTET UND RAMAN VERSTÄRKT

Title (fr)

SYSTEME DE FIBRE OPTIQUE AVEC COMMUTATION ET GAIN RAMAN SIMULTANES

Publication

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Application

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Abstract (en)

[origin: WO9801777A2] A fiber optic system in accordance with the present invention includes an optical fiber, a coupling device, and a system for generating a pump signal. The optical fiber has a birefringence which preserves polarization and has a first polarization mode which is substantially perpendicular to a second polarization mode. The coupling device couples an input signal with an input wavelength into the optical fiber so that the input signal propagates in the first polarization mode in the optical fiber. The system for generating a pump signal generates a pump signal with a pump wavelength which is within a range of 50 nanometers (nm) to 300 nm less than the input wavelength and which has a first amount of pump power which is enough power to switch the input signal, but not enough to create higher order solitons. The coupling device also couples the pump signal into the optical fiber so that the pump signal propagates in the first polarization mode in the optical fiber. The pump signal induces a nonlinear birefringence in the optical fiber which causes the input signal to switch polarization modes and propagate in the second polarization mode, and amplifies the input signal propagating through the optical fiber. Accordingly, with the fiber optic system an input signal can be amplified and switched concurrently, and thus separate stages for amplification and switching are not required.

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