

Nonlinear effects generation in non-adiabatically tapered fibres

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Abstract.

Nonlinear effects are observed in a non-adiabatically tapered optical fibre. The designed structure allows for the introduction of self-phase modulation, which is observed through pulse breaking and spectral broadening, in approximately a centimetre of propagation using a commercial telecom laser. These devices are simple to fabricate and suitable to generate and control a variety of nonlinear effects in practical applications because they do not experience short-term degradation as previously reported approaches. Experimental and theoretical results are obtained, showing a good agreement.

Keywords

Nonlinear optics fibres; Fibre optics measurements; Optical processing