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(54) Title: SYSTEM AND METHOD FOR GENERATING SUPERCONTINUUM LIGHT

(57) Abstract: A supercontinuum light source includes a modulated pump laser, a first fiber, and a nonlinear waveguide. The modulated pump laser generates light comprising longer pulses, where a longer pulse has a temporal duration of approximately ten picoseconds or more. The first fiber breaks at least one longer pulse into shorter pulses, where a shorter pulse has a temporal duration of approximately two picoseconds or less. The first fiber at least partially operates in an anomalous group velocity dispersion regime, and the shorter pulses result from a modulational instability in the first fiber. The nonlinear waveguide spectrally broadens the shorter pulses to yield supercontinuum light, where the supercontinuum light has a spectral width of approximately 150 nanometers or more.

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US06/02151

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC: **H01S 3/063**( 2006.01);**G02B 6/43**( 2006.01)

USPC: 359/337.5;372/6,28  
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,775,447 (NICHOLSON et al) 10 August 2004 (10.07.2004) ,Fig. 2, 3rd col. lines 42-43, 55-67, 4th col. lines 1-9,24-37, 9th col. lines 36-40.	1,2,4,8-17 ----- 3, 5, 6, 18-20
Y	US 2004/0240037 A1 (HARTER) 2 December 2004 (02.12.2004), Fig. 2, para. [0038].	3,5,6,19
A	US 5,400,165 (GNAUCK et al.) 21 March 1995 (21.03.1995)	
A,P	US 20050111500 A1 (HARTER et al) 26 May 2005 (26.05.2005)	
A, T	US 2006/0245461 A1 (ISLAM) 2 November 2006 (02.11.2006)	
A,T	US 7,167,300 (Fermann et al.) 23 January 2007 (23.01.2007)	

Further documents are listed in the continuation of Box C.


See patent family annex.

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