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(54) Title: CHIRPED-PULSE QUADRATIC NONLINEARITY-BASED HIGH-ENERGY PULSE COMPRESSOR

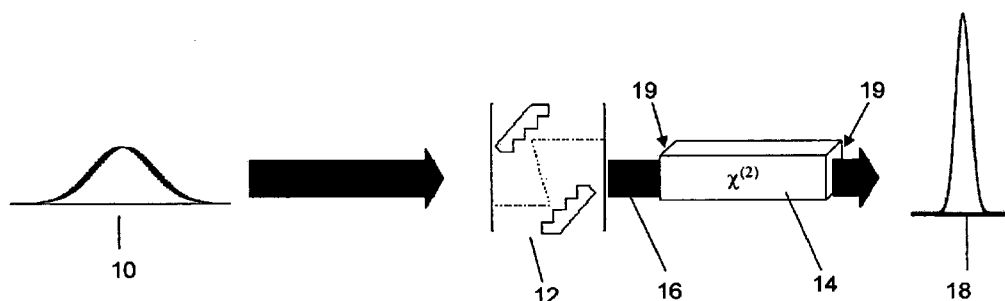


FIG. 1

(57) Abstract: A pulse compression technique for compressing femtosecond-duration high-energy pulses first linearly chirps and thus broadens an input pulse before compressing it by nonlinear soliton compression. The technique simultaneously decreases the final compressed pulse duration and improves of the compressed pulse quality. In the preferred embodiment, a linear dispersive delay (12) is employed for chirping the pulse and a single quadratic nonlinear crystal (14) is employed for nonlinear soliton compression of the pulse.



WO 2007/142843 A3

INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC: **G02F 1/35(2006.01);H01S 3/00(2006.01)**

USPC: 359/326,330,333,337.5;372/21

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)
U.S. : 359/326, 327, 328, 330, 333, 337.5; 372/21

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)
East database searched, Search terms: {pulse\$1 adj3 compress\$5}, (nlo or non-linear or nonlinear) with crystal\$1

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/0050369 A1 (KAFKA et al) 09 May 2006 (09.05.2006), pages 2-4 and Figs. 4, 8, and 10.	1-10
X	US 6,198,568 B1 (GALVANAUSKAS et al) 06 March 2001 (06.03.2001), columns 5, 9 and 11, Fig. 1	1, 2, 4, 7, 8

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means		
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