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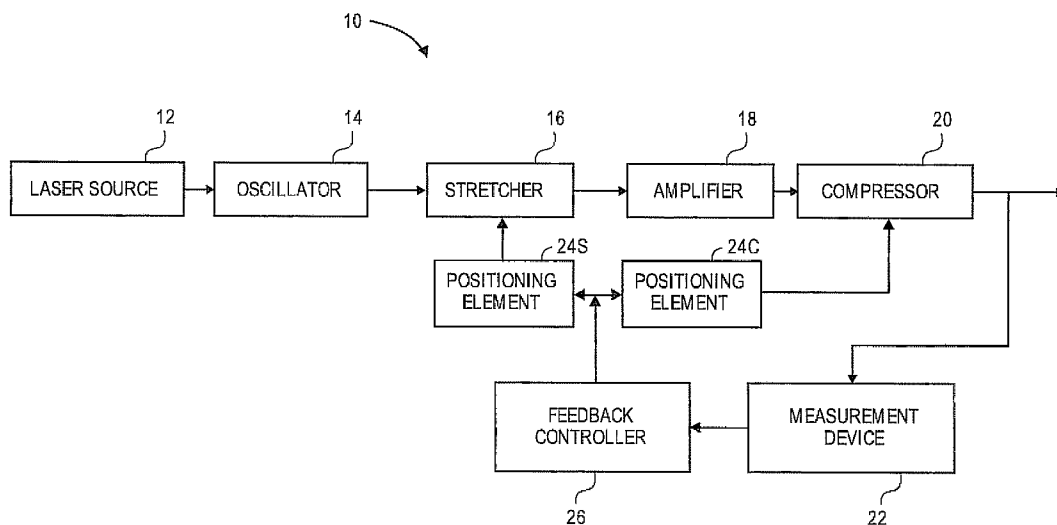
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(54) Title: METHOD AND APPARATUS FOR CONTROLLING CARRIER ENVELOPE PHASE



(57) Abstract: A chirped pulse amplification laser system The system generally comprises a laser source (12), a pulse modification apparatus (18) including first and second pulse modification elements separated by a separation distance, a positioning element (24s), a measurement device (22), and a feedback controller (26), The laser source (12) is operable to generate a laser pulse a the pulse modification apparatus operable to modify at least a portion of the laser pulse The positioning element (24s) is operable to reposition at least a portion of the pulse modification apparatus to vary the separation distance, The measurement device (22) is operable to measure the carrier envelope phase of the generated laser pulse and the feedback controller (26) is operable to control the positioning element based on the measured carrier envelope phase to vary the separation distance of the pulse modification elements and control the earner envelope phase of laser pulses generated by the laser source.

WO 2007/149956 A3

**INTERNATIONAL SEARCH REPORT**

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**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC: **H01S 3/13(2006.01)**  
  
 USPC: 372/26,29.011  
 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. : 372/26,29.011  
  
 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.
A	US 2007/0171945 A1 (LIU et al.) 26 July 2007 (26.07.2007), see all document	1-23
A	US 2004/0190911 A1 (FRANCO et al.) 30 September 2004 (30.09.2004) see all document	1-20
A	US 7,010,231 B1 (FRANCO, et al) 7 March 2006 (07.03.2006), see all document	1-20

Further documents are listed in the continuation of Box C.       See patent family annex.

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