

Title (en)

SHORT PULSE LASER SYSTEM, AND METHOD FOR GENERATING LASER PULSES

Title (de)

KURZPULS-LASERSYSTEM UND VERFAHREN ZUR ERZEUGUNG VON LASERPULSEN

Title (fr)

SYSTÈME LASER À IMPULSIONS BRÈVES ET PROCÉDÉ DE GÉNÉRATION D'IMPULSIONS LASER

Publication

EP 4205246 A1 20230705 (DE)

Application

EP 21759266 A 20210805

Priority

- DE 102020122731 A 20200831
- EP 2021071936 W 20210805

Abstract (en)

[origin: WO2022043021A1] The invention relates to an optical system comprising: a laser source (1) which generates pulsed laser radiation consisting of a temporal sequence of laser pulses; and at least one pulse compression device (3) which is located in the beam path and has a non-linear medium (7), wherein the laser pulses undergo non-linear spectral broadening during propagation through the medium (7), and a chirp is applied to the laser pulses. The aim of the invention is to provide an optical system which makes it possible to generate non-linearly compressed laser pulses with improved temporal pulse contrast or with improved pulse quality. According to the invention, a group delay dispersion which varies along the beam path and which compensates at least partially for the chirp is applied to the laser pulses by the pulse compression device (3).

IPC 8 full level

H01S 3/00 (2006.01); **G02F 1/35** (2006.01); **H01S 3/067** (2006.01)

CPC (source: EP US)

G02F 1/3503 (2021.01 - US); **G02F 1/3511** (2013.01 - EP); **G02F 1/365** (2013.01 - US); **H01S 3/0057** (2013.01 - EP US); **H01S 3/0092** (2013.01 - US); **G02F 2201/17** (2013.01 - EP US); **H01S 3/0092** (2013.01 - EP); **H01S 3/06754** (2013.01 - EP); **H01S 2301/08** (2013.01 - EP US)

Citation (search report)

See references of WO 2022043021A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

DE 102020122731 A1 20220303; CN 116529667 A 20230801; EP 4205246 A1 20230705; US 2023335964 A1 20231019; WO 2022043021 A1 20220303

DOCDB simple family (application)

DE 102020122731 A 20200831; CN 202180070447 A 20210805; EP 2021071936 W 20210805; EP 21759266 A 20210805; US 202118023753 A 20210805