



(12) **CORRECTED EUROPEAN PATENT SPECIFICATION**

(15) Correction information:
Corrected version no 1 (W1 B1)
Corrections, see
Bibliography INID code(s) 73

(51) International Patent Classification (IPC):
H01S 4/00 ^(2006.01) **H05H 1/06** ^(2006.01)
H01S 3/032 ^(2006.01) **H01S 3/22** ^(2006.01)

(52) Cooperative Patent Classification (CPC):
H01S 4/00; H01S 3/032; H05H 1/06; H01S 3/22

(48) Corrigendum issued on:
29.03.2023 Bulletin 2023/13

(45) Date of publication and mention
of the grant of the patent:
22.02.2023 Bulletin 2023/08

(21) Application number: **17164803.3**

(22) Date of filing: **04.04.2017**

(54) **PLASMA CONFINEMENT OF A LASER GAIN MEDIA FOR GAIN-AMPLIFIED LASERS**
PLASMAEINSCHRÄNKUNG VON LASER-GAIN-MEDIEN FÜR GAIN-VERSTÄRKTE LASER
CONFINEMENT DE PLASMA D'UN MILIEU À GAIN LASER POUR DES LASERS À GAIN AMPLIFIÉ

(84) Designated Contracting States:
**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**

(30) Priority: **07.04.2016 US 201615092909**

(43) Date of publication of application:
11.10.2017 Bulletin 2017/41

(73) Proprietor: **The Boeing Company**
Arlington, VA 22202 (US)

(72) Inventors:
• **CLEMEN Jr, Mark Joseph**
Chicago, IL 60606-2016 (US)
• **GROSSNICKLE, James A**
Chicago, IL 60606-2016 (US)
• **NIKIC, Dejan**
Chicago, IL 60606-2016 (US)

(74) Representative: **Boult Wade Tennant LLP**
Salisbury Square House
8 Salisbury Square
London EC4Y 8AP (GB)

(56) References cited:
JP-A- S6 276 790 JP-A- S60 124 342
JP-A- S61 292 842 US-A- 5 896 407
US-A1- 2009 303 579 US-B1- 6 795 462
US-B1- 7 679 025

- **ITO H ET AL: "Angular distribution measurements of energy spectra of protons emitted from hydrogen plasma focus", 2014 IEEE 41ST INTERNATIONAL CONFERENCE ON PLASMA SCIENCES (ICOPS) HELD WITH 2014 IEEE INTERNATIONAL CONFERENCE ON HIGH-POWER PARTICLE BEAMS (BEAMS), IEEE, 25 May 2014 (2014-05-25), pages 1-4, XP032724231, DOI: 10.1109/PLASMA.2014.7012720 ISBN: 978-1-4799-2711-1 [retrieved on 2015-01-16]**
- **WITHERSPOON F ET AL: "A contoured gap coaxial plasma gun with injected plasma armature", REVIEW OF SCIENTIFIC INSTRUMENTS, AIP, MELVILLE, NY, US, vol. 80, no. 8, 27 August 2009 (2009-08-27), pages 83506-83506, XP012128441, ISSN: 0034-6748, DOI: 10.1063/1.3202136**

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

- MOHANTY S ET AL: "Miniature hybrid plasma focus extreme ultraviolet source driven by 10kA fast current pulse", REVIEW OF SCIENTIFIC INSTRUMENTS, AIP, MELVILLE, NY, US, vol. 77, no. 4, 24 April 2006 (2006-04-24) , pages 43506-043506, XP012092980, ISSN: 0034-6748, DOI: 10.1063/1.2194587
- YUANLICHENG ET AL: "Observation of soft X-ray amplification in Ne-like Ar by a capillary discharge", QUANTUM ELECTRONICS CONFERENCE, 2005. INTERNATIONAL JULY 11, 2005, PISCATAWAY, NJ, USA, IEEE, 11 July 2005 (2005-07-11), pages 1140-1145, XP010865947, DOI: 10.1109/IQEC.2005.1561039 ISBN: 978-0-7803-9240-3
- EBERL E ET AL: "XUV-Amplification in an argon z-pinch plasma", NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION A: ACCELERATORS, SPECTROMETERS, DETECTORS, AND ASSOCIATED EQUIPMENT, ELSEVIER BV * NORTH-HOLLAND, NL, vol. 415, no. 3, 1 October 1998 (1998-10-01), pages 628-631, XP004140802, ISSN: 0168-9002, DOI: 10.1016/S0168-9002(98)00436-7