

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
29 August 2019 (29.08.2019)



(10) International Publication Number
WO 2019/165426 A1

(51) International Patent Classification:
H01S 3/09 (2006.01) *H01S 3/10* (2006.01)

(21) International Application Number:
PCT/US2019/019583

(22) International Filing Date:
26 February 2019 (26.02.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/635,174 26 February 2018 (26.02.2018) US
62/653,767 06 April 2018 (06.04.2018) US

(71) Applicant: **CYNOSURE, INC.**, [US/US]; 5 Carlisle Road,
Westford, Massachusetts 01886 (US).

(72) Inventors: **MIRKOV, Mirko**; 255 North Road, #221,
Chelmsford, Massachusetts 01824 (US). **ZENZIE, Henry**;
36 Cross Street, Dover, Massachusetts 02030 (US).

(74) Agent: **IWANICKI, John P.**; Banner & Witcoff, LTD., 28
State Street, Suite 1800, Boston, Massachusetts 02109 (US).

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,
KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

Published:

— *with international search report (Art. 21(3))*

(54) Title: Q-SWITCHED CAVITY DUMPED SUB-NANOSECOND LASER

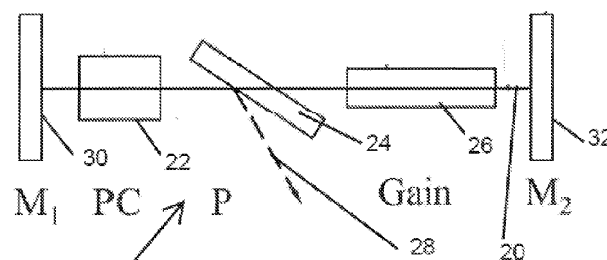


Figure 1

(57) Abstract: Apparatuses and methods are disclosed for applying laser energy having desired pulse characteristics, including a sufficiently short duration and/or a sufficiently high energy for the photomechanical treatment of skin pigmentations and pigmented lesions, both naturally-occurring (*e.g.*, birthmarks), as well as artificial (*e.g.*, tattoos). The laser energy may be generated with an apparatus having a resonator with a sub-nanosecond round trip time.



WO 2019/165426 A1