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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
8 July 2010 (08.07.2010)

PCT

(10) International Publication Number
WO 2010/078175 A1

(51) International Patent Classification:
A61M 25/00 (2006.01)

(21) International Application Number:
PCT/US2009/069334

(22) International Filing Date:
22 December 2009 (22.12.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

61/142,128	31 December 2008 (31.12.2008)	US
12/495,691	30 June 2009 (30.06.2009)	US
091679373	14 August 2009 (14.08.2009)	EP
091682047	14 August 2009 (14.08.2009)	EP
091682021	14 August 2009 (14.08.2009)	EP
12/545,648	21 August 2009 (21.08.2009)	US

(71) Applicant *(for all designated States except US)*: **ARDIAN, INC.** [US/US]; 1810A Embarcadero Road, Palo Alto, CA 94303 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **WU, Andrew** [US/US]; 506 Gibraltor Lane, Foster City, CA 94404 (US). **CLARK, Benjamin, J.** [US/US]; 498 Alameda De Las Pulgas, Redwood City, CA 94062 (US). **ZARINS, Denise** [US/US]; 20746 Verde Vista Lane, Saratoga, CA 95070 (US). **THAI, Erik** [US/US]; 2318 Brushgen Way, San Jose, CA (US).

(74) Agents: **POLEDNA, Aaron, J.** et al.; Perkins Coie LLP, P.O.Box 1247, Seattle, WA 98111-1247 (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, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: APPARATUS, SYSTEMS AND METHODS FOR ACHIEVING INTRAVASCULAR, THERMALLY-INDUCED RENAL NEUROMODULATION

(57) Abstract: Apparatus, systems, and methods for achieving thermally-induced renal neuromodulation by intravascular access are disclosed herein. One aspect of the present application, for example, is directed to apparatuses, systems, and methods that incorporate a treatment device comprising an elongated shaft. The elongated shaft is sized and configured to deliver a thermal element to a renal artery via an intravascular path. Thermally-induced renal neuromodulation may be achieved via direct and/or via indirect application of thermal energy to heat or cool neural fibers that contribute to renal function, or of vascular structures that feed or perfuse the neural fibers.

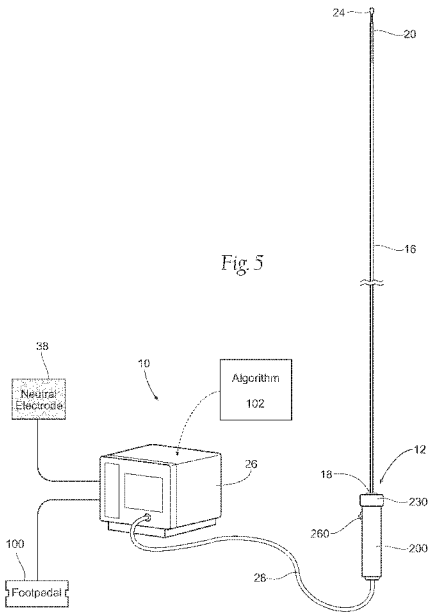


Fig. 5

WO 2010/078175 A1

ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

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