

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number
WO 2005/053086 A3

(51) International Patent Classification⁷: **H01P 11/00**, 7/00

(74) Agent: **LANGWORTHY, John, A.**; E. I. Du Pont De Nemours and Company, Legal Patent Records Center, 4417 Lancaster Pike, Wilmington, Delaware 19805 (US).

(21) International Application Number:
PCT/US2004/039332

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date:
19 November 2004 (19.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/523,988 21 November 2003 (21.11.2003) US

(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, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicants (for all designated States except US): **E.I. DUPONT DE NEMOURS AND COMPANY** [US/US]; 1007 Market Street, Wilmington, Delaware 19898 (US). **GUO, Juinn-Sheng** [US/US]; 6 Hollister Leight Court, Newark, Delaware 19702 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ALVAREZ, Robby** [US/US]; 70 Hidden Valley Drive, Newark, Delaware 19711 (US). **ESTRADA, Calixto** [US/US]; 411 Skyview Drive, Middletown, Delaware 19707 (US). **MARTIN, Paul, J.** [US/US]; 937 Hudson Street, Gloucester City, New Jersey 08030 (US). **MCCAMBRIDGE, James, D.** [US/US]; 406 Walnut Lane, Swarthmore, Pennsylvania 19081 (US). **ROSSI, Robert, J.** [US/US]; 347 Rockmead Drive, Wilmington, Delaware 19810 (US). **SHEN, Shi-Yuan** [US/US]; 5 Stone Barn Lane, Wilmington, Delaware 19807 (US).

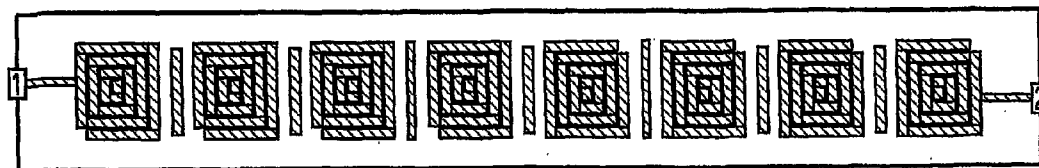
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
28 July 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LASER TRIMMING TO TUNE THE RESONANCE FREQUENCY OF A SPIRAL RESONATOR, THE CHARACTERISTICS OF A HIGH TEMPERATURE SUPERCONDUCTOR FILTER COMPRISED OF SPIRAL RESONATORS, OR THE RESONANCE FREQUENCY OF A PLANAR COIL



(57) Abstract: This invention provides a laser trimming method for tuning the frequency of a spiral resonator, and for improving the characteristics of a high temperature superconductor filter comprised of high temperature superconductor spiral resonators, by tuning the individual high temperature superconductor spiral resonators. This invention also provides a method for tuning the resonance frequency of a high temperature superconductor planar coil. This invention also provides a laser ablation process for creating high temperature superconductor circuit elements.



WO 2005/053086 A3