

16/04/03

2003021490

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

(19) World Intellectual Property Organization
International Bureau

162162

(43) International Publication Date
8 August 2002 (08.08.2002)

PCT

(10) International Publication Number
WO 02/061168 A3(51) International Patent Classification⁷: **C23C 14/34**,
16/08, C22B 34/00, C22C 27/00, C22B 34/12, 34/14(74) Agents: **LATWESEN, David, G.** et al.; 601 W. First Av-
enue, Ste. 1300, Spokane, Washington 99201 (US).

(21) International Application Number: PCT/US01/50645

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,
SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(22) International Filing Date: 17 October 2001 (17.10.2001)

(25) Filing Language: English

(26) Publication Language: English

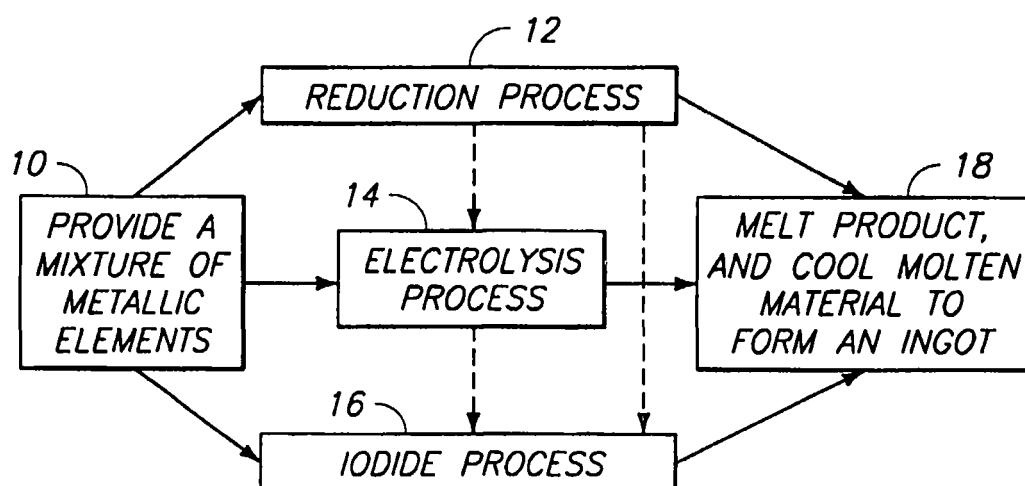
(30) Priority Data:
09/695,814 24 October 2000 (24.10.2000) US(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
TG).(71) Applicant: **HONEYWELL INTERNATIONAL INC.**
[US/US]; Box 2245, 101 Columbia Road, Morristown, NJ
07962 (US).(72) Inventors: **TURNER, Stephen, P.**; 4026 Turnwood Lane,
Moon, PA 15108 (US). **GREEN, Joseph, E.**; 200 Whis-
pering Oaks Drive, Cranberry Township, PA 16066 (US).
SCAGLINE, Rodney, L.; 582 Prospect Road, Evans City,
PA 16033 (US). **XU, Yun**; 3679 Allendale Circle, Pitts-
burgh, PA 15204 (US).

Published:

— with international search report
— with amended claims(88) Date of publication of the international search report:
13 March 2003

[Continued on next page]

(54) Title: METHODS OF FORMING SPUTTERING TARGETS



(57) Abstract: The invention encompasses methods of forming titanium-based mixed-metal materials and zirconium-based mixed-metal materials utilizing one or more of a reduction process, electrolysis process and iodide process. The invention also encompasses a sputtering target comprising zirconium and one or more elements selected from the group consisting of Al, B, Ba, Be, Ca, Ce, Co, Cs, Dy, Er, Fe, Gd, Hf, Ho, La, Mg, Mn, Mo, Nb, Ni, Pr, Sc, Sm, Sr, Ta, Ti, V, W, Y, and Yb. The invention also encompasses a sputtering target comprising titanium and boron.

WO 02/061168 A3



ACTION

WO 02/061168 A3

Date of publication of the amended claims: 26 June 2003

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.