

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
15 June 2006 (15.06.2006)

PCT

(10) International Publication Number
WO 2006/063221 A3

(51) International Patent Classification:
C22B 34/12 (2006.01) **C22B 1/02** (2006.01)

(21) International Application Number:
PCT/US2005/044599

(22) International Filing Date:
9 December 2005 (09.12.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/635,284 10 December 2004 (10.12.2004) US

(71) Applicant (for all designated States except US): **ALTAIR NANOMATERIALS INC.** [US/US]; 204 Edison Way, Reno, NV 89502 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **VERHULST, Dirk, E.** [US/US]; 204 Edison Way, Reno, NV 89502 (US). **SABACKY, Bruce, J.** [US/US]; 8555 Council Lane, Reno, NV 89511 (US). **LANG, Jeffrey, Spencer** [US/US]; 810 Stoker Avenue, Reno, NV 89503 (US).

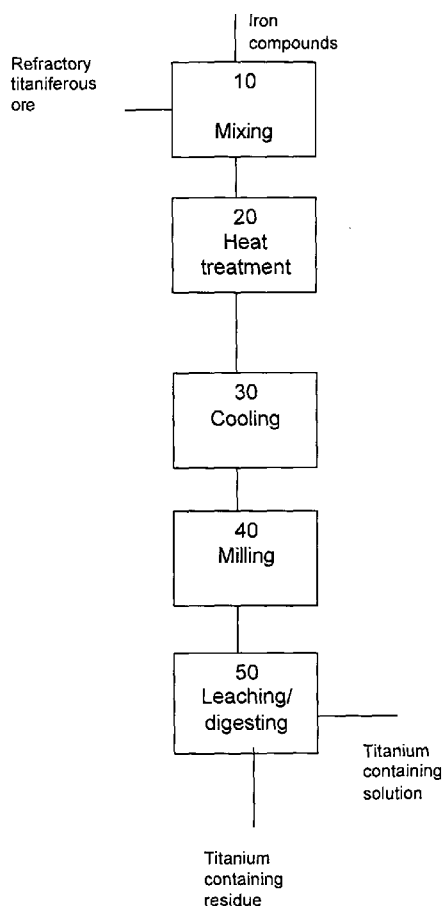
(74) Agent: **NICHOLS, Peter, G.**; Brinks Hofer Gilson & Li-one, P.O. Box 10087, Chicago, IL 60610 (US).

(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, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, 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).

[Continued on next page]

(54) Title: PRETREATMENT OF REFRACTORY TITANIFEROUS ORES



(57) Abstract: A process for increasing the solubility of titanium in oxidized titanium compounds, titaniferous ore, ore concentrate, or mixtures thereof. The process includes adding an iron compound to the titaniferous ore or ore concentrate, mixing to form a mixture, heating under a controlled atmosphere to form an iron-titanium compound, cooling, and milling to form a powder. The solubility in concentrated hydrochloric acid of the titanium in the powder is greater than the solubility of the titanium in the titaniferous ore or ore concentrate.

WO 2006/063221 A3



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

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.

(88) Date of publication of the international search report:

27 July 2006