

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 June 2007 (14.06.2007)

PCT

(10) International Publication Number
WO 2007/066350 A1

(51) International Patent Classification:

C22B 7/04 (2006.01) **C21B 13/00** (2006.01)
C22B 15/00 (2006.01)

(21) International Application Number:

PCT/IN2005/000452

(22) International Filing Date:

29 December 2005 (29.12.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

3331DEL2005 9 December 2005 (09.12.2005) IN

(71) Applicant (for all designated States except US): **COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH** [IN/IN]; INTELLECTUAL PROPERTY MANAGEMENT DIVISION, 3rd Floor, CSIR, Nisair Building 14 Satsang Vihar Marg, Special Institutional Area, New Delhi 110067 (IN).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **AGRAWAL, Archana** [IN/IN]; National Metallurgical Laboratory, Jamshedpur 831 007 (IN). **SAHOO, Kanai, Lal** [IN/IN]; National Metallurgical Laboratory, Jamshedpur 831 007 (IN). **GHOSH, Sukomal** [IN/IN]; National Metallurgical Laboratory, Jamshedpur 831 007 (IN). **PANDEY, Ban-shi, Dhar** [IN/IN]; National Metallurgical Laboratory, Jamshedpur 831 007 (IN).

(74) Common Representative: **COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH**; INTELLECTUAL PROPERTY MANAGEMENT DIVISION, 3rd Floor, CSIR, Nisair Building 14 Satsang Vihar Marg, Special Institutional Area, New Delhi 110067 (IN).

(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).

Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report

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: A PROCESS FOR RECOVERY OF IRON FROM COPPER SLAG

(57) Abstract: The present invention relates to a process for recovery of iron from copper slag. This invention particularly relates to a process for recovery of iron from a waste like granulated copper slag generated during the production of copper from its ores by a pyrometallurgical method. The present invention will be useful for solving the ecological and environmental issues with an added economic advantage of utilising the dump slag generated in the copper plants. Novelty of the present invention is process for the preparation of value added products viz grinding grade cast iron using copper slag generated during the processing of copper concentrate which otherwise is considered as a waste. Other novel features of the inventions are creating a homogeneous mixture of slag, reductant and flux so that reaction kinetics is more than conventional process. The reductant is used in such a way so that maximum recovery of iron can take place.

WO 2007/066350 A1