

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
22 June 2006 (22.06.2006)

PCT

(10) International Publication Number
WO 2006/065458 A3

(51) International Patent Classification:
B01J 31/18 (2006.01) **C07D 213/53** (2006.01)

(21) International Application Number:
PCT/US2005/042175

(22) International Filing Date:
21 November 2005 (21.11.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/009,916 10 December 2004 (10.12.2004) US

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(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 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

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

1 February 2007

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

(54) Title: METHODS FOR PRODUCING A HEXADENTATE BIMETALLIC COMPLEX

(57) Abstract: The present application discloses methods for producing a hexadentate bimetallic complex. A method may comprise contacting an acyliminepyridine compound, a metal salt, and an amine to form a mixture; and recovering the hexadentate bimetallic complex from the mixture. A method may also comprise forming at least one imine bond in the presence of a metal salt, metal complex, or combinations thereof. The metal salt may be iron, cobalt, nickel, chromium, vanadium or mixtures thereof. The acyliminepyridine compound may be a mono-acyliminepyridine in instances where the amine is a diamine. In such instances, the mono-acyliminepyridine compound to diamine molar ratio may be in the range of about 2:1; and the mono-acyliminepyridine compound to metal salt molar ratio may be in the range of about 1:1. Methods for preparing an acyliminepyridine compound for use in preparation of a hexadentate bimetallic complex are also disclosed. Such methods may comprise contacting a di-acylpyridine with a first amine to form a first mixture, and recovering the acyliminepyridine compound from the first mixture.



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