

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/035596 A1

(51) International Patent Classification⁷: **C07F 15/00**

(21) International Application Number:
PCT/EP2003/011222

(22) International Filing Date: 10 October 2003 (10.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
P.356652 15 October 2002 (15.10.2002) PL

(71) Applicant (for all designated States except US):
BOEHRINGER INGELHEIM INTERNATIONAL GMBH [DE/DE]; Binger Strasse 173, 55216 Ingelheim (DE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **GRELA, Karol** [PL/PL]; ul. Pelczynskiego 22B, m. 45, 01-471 Warszawa (PL).

(74) Common Representative: **BOEHRINGER INGELHEIM INTERNATIONAL GMBH**; Binger Strasse 173, 55216 Ingelheim (DE).

(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, 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, 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.

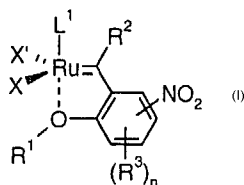
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

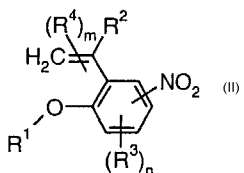
— with international search report

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: RUTHENIUM COMPLEXES AS (PRE)CATALYSTS FOR METATHESIS REACTIONS



(57) Abstract: The invention relates to new (pre)catalysts of ruthenium complexes of formula (I), wherein L¹, X, X', R¹, R², R³ and n are defined herein. The novel ruthenium complexes of formula 1 are convenient (pre)catalysts for metathesis reactions and can be applied i.e. for ring-closing metathesis, cross metathesis or ene-ine metathesis reactions. Another aspect of the invention are the novel intermediates of formula (II).



WO 2004/035596 A1