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AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(54) Title: PROCESS FOR OXIDIZING ALKYL AROMATIC COMPOUNDS

(57) Abstract: A process and a mixture for oxidizing an alkyl-aromatic compound comprises forming a mixture comprising the alkyl-aromatic compound, a solvent, a bromine source, and a catalyst; and contacting the mixture with an oxidizing agent at oxidizing conditions to produce an oxidation product comprising at least one of an aromatic aldehyde, an aromatic alcohol, an aromatic ketone, and an aromatic carboxylic acid. The solvent comprises a carboxylic acid having from 1 to 7 carbon atoms and an ionic liquid selected from the group consisting of an imidazolium ionic liquid, a pyridinium ionic liquid, a phosphonium ionic liquid, a tetra alkyl ammonium ionic liquid, and combinations thereof. The catalyst comprises at least one of cobalt, titanium, manganese, chromium, copper, nickel, vanadium, iron, molybdenum, tin, cerium, and zirconium.



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**A. CLASSIFICATION OF SUBJECT MATTER***C07C 51/21(2006.01)i, C07C 63/26(2006.01)i, C07C 63/00(2006.01)i, C07C 51/47(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

C07C 51/21; C07C 51/16; C07C 51/265

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords: oxidation, alkyl-aromatic compound

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 2009-0326265 A1 (HASHMI, SYED AZAHAR et al.) 31 December 2009 See the abstract; claims 1-14; paragraphs [0015], [0020], [0024], [0025]	1-9 10
A	US 2007-0010688 A1 (KO, DONG-HYUN et al.) 11 January 2007 See the abstract; claims 1-20	1-10

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

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"E" earlier application or patent but published on or after the international filing date

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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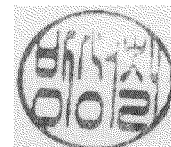
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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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**PCT/US2011/040502**

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