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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,

[Continued on next page]

(54) Title: MANUFACTURE OF METHANOL

(57) Abstract: Methanol is produced from methane and oxygen in a single step process using a heterogenous catalyst. The catalyst comprises the chloride salts of copper, potassium, lead and zinc.

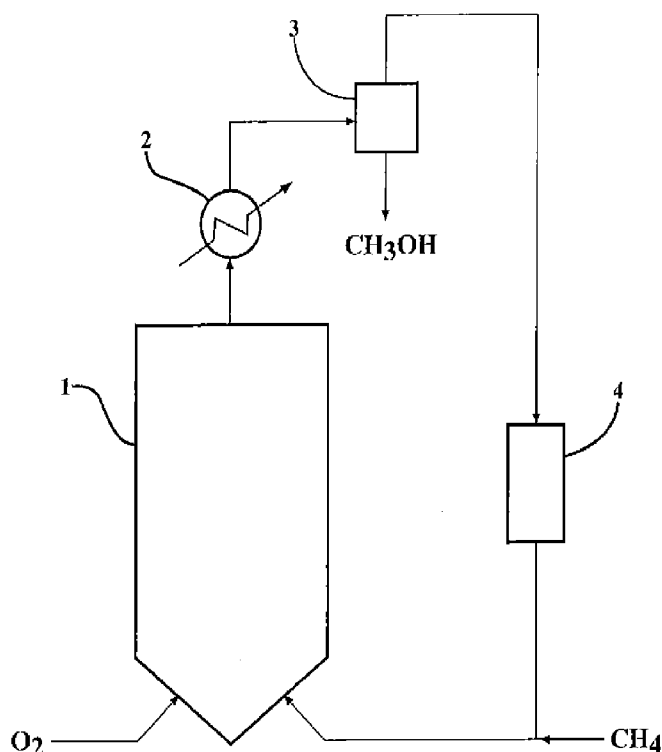


FIG. 1



MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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.

DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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**A. CLASSIFICATION OF SUBJECT MATTER***C07C 29/48(2006.01)i, C07C 29/94(2006.01)i, C07C 31/04(2006.01)i, B01J 27/122(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 29/48; C07C 29/124; C07C 17/10; C07C 27/10; C07C 29/50; C07C 2/00; C07B 41/02; C07C 31/04

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: methanol, methane, oxygen, single step, heterogeneous catalyst

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages          | Relevant to claim No. |
|-----------|---------------------------------------------------------------------------------------------|-----------------------|
| A         | WO 93-21141 A1 (STAUFFER, JOHN, E.) 28 October 1993<br>See claims 1-6; page 7, lines 15-19. | 1-4                   |
| A         | US 04990696 A (STAUFFER, JOHN E.) 05 February 1991<br>See claims 1-7.                       | 1-4                   |
| A         | US 6380444 B1 (BJERRUM, NIELS J. et al.) 30 April 2002<br>See claims 1, 5, 6, 11, 13-17.    | 1-4                   |
| A         | US 04918249 A (DURANTE, VINCENT A. et al.) 17 April 1990<br>See claims 1, 8.                | 1-4                   |



Further documents are listed in the continuation of Box C.



See patent family annex.

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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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"&amp;" document member of the same patent family

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

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