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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))

[Continued on next page]

(54) Title: NOVEL QUATERNARY FOAMERS FOR DOWNHOLE INJECTION

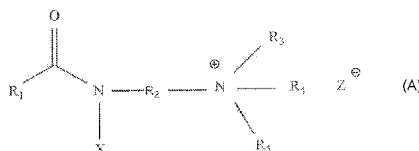
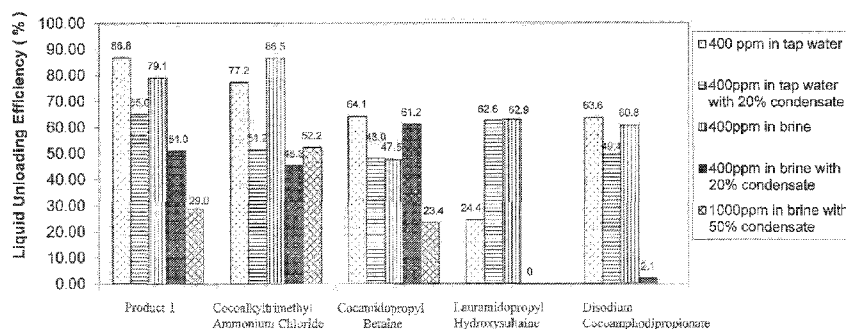


Figure 1

Dynamic Foaming Test Results



(57) Abstract: A method of foaming a fluid for recovering gas from a gas well and enhancing oil production from a gas-lifted oil well penetrating a subterranean oil-bearing formation is disclosed and claimed. The method includes introducing into the fluid a foam-forming amount of a composition comprising at least one compound having the general formula (A); R_1 is selected from a saturated linear or branched alkyl, an unsaturated linear or branched alkyl, a substituted naphthalene, a substituted benzene, a natural oil, and a natural oil derivative. R_2 is a C_2 - C_8 alkyl. R_3 , R_4 , and R_5 are independently selected from trimethyl, triethyl, diethyl, benzyl dimethyl, and benzyl diethyl. X is selected from hydrogen, methyl, and ethyl. Z^- is a negatively charged counterion.

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A. CLASSIFICATION OF SUBJECT MATTER***C09K 8/58(2006.01)i, C09K 8/502(2006.01)i, C09K 8/565(2006.01)i, C09K 8/594(2006.01)i, E21B 43/16(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)

C09K 8; E21B 43

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) & Keywords: subterranean, wellbore, oilfield, foam, cationic surfactant, quaternary ammonium, dimethylaminopropylamine(DMAPA), amidopropylamine, soybean, soya.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005-0137114 A1 (GATLIN, LARRY W. et al.) 23 June 2005 See abstract; paragraphs [0002], [0003], [0009], [0032] - [0034], [0039] and [0044]; all examples.	1, 4-8, 10, 12-23
Y	See paragraph [0039].	2, 3, 9, 11
Y	US 2006-0025321 A1 (TREYBIG, DUANE S. et al.) 02 February 2006 See abstract; paragraph [0009].	2, 3, 9
Y	US 2007-0125542 A1 (WEI, ZHENQIANG et al.) 07 June 2007 See abstract; paragraphs [0010] - [0013].	9, 11
A	US 2006-0148660 A1 (CHEN, YIYAN et al.) 06 July 2006 See the whole document.	1-23
A	US 2010-0077938 A1 (ZAMORA, FRANK et al.) 01 April 2010 See the whole document.	1-23
A	US 2007-0167332 A1 (SUBRAMANIAN, SHANKAR et al.) 19 July 2007 See the whole document.	1-23



Further documents are listed in the continuation of Box C.



See patent family annex.

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"&" document member of the same patent family

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