Abstract:

Dimethly ether (DME) is a clean fuel that does not produce toxic gases or particulate matter (PM) at burning. JFE Group develops a direct synthesis process of an rober e ca e ceca o do r e ean . e ecerca.

3.2.3 Establishment of formation technology for synthesis gas suitable for JFE Process

We concern a constant based by efficient act, e e is e a a constant e a efficient act, ATR) constant e is e efficient action of H_2/CO . e constant e is educed a constant H_2/CO . e constant e is educed a constant $H_2/CO = 1$, constant e is educed a constant $H_2/CO = 1$, is e JFE Percent, and is e JFE Percent, can be based by ecconstant is educed by do CO_2 for DME constant E. (a) a e ATR.

$$2CH_4 + O_2 + CO_2 \rightarrow 3CO + 3H_2 + H_2O$$

4. History of Technical Development of JFE Process

A .e be . . f .e 1990, .e f .e NKK befie e e e c ea . e JFE G, , . . e on ean fie Prf. Finner' Lab an ... e De a . e • f S . e . c C e . . (f . e ... e), Fac-. f E , ee , U , $e \in A$, f T , \bullet , de $e\bullet$ ed a DME d ec c . ec.c ca a c . . . e a. . f effec j e b - d ced and deree d.c. The an .e. c. c. e. . c. de es .e. .T. e eafe, be .-1994, ereac ad de este e e cated n an all-reale 50. /d be c la linaled l .eec . eeac ce e f f e NKK, a d.e baric ec f. e DME d ec (, eric , cerc ar er ab... ed. T. e , e a 5 ea e e d f 1997, a 5 /d a e-rea e be c a ar o r c ed . e e sternf. e Ta. en Ga M. G., Ld. (f. e $(a, e) \in K (a, a, b) \dots a d (a, e) (a, f) (a, e) Ce$ e f G a U ... a . , Ja a . Refea c a d de es e eeo ed, ad.ee.e e econo erof . e JFE P. cerr ar a ...e, c. d. . e r . err ar 2002, a 100 /d de • c a • . a • . ec ac ca . ed • file • re• fec lea dejer le filo e c.a. a. f. e JFE P. cerr ar a f ded .ec. f .eAecfi Na a Ren ceradEe.

5. 100 t/d Demonstration Plant Project

I Dec. 2001, DME De en e G., Ld. ar er abur, ed ar e e e er er be finne e e . e 100 /d de e an an ec b a filo on a er, c d e fine NKK, N San G., Tina Trice G., Hack Ld., Ma be G., Ide e Kana G., Ld., INPEX G., LNG Ja a G., Tia F. aE, f, a d Ja a Penne E ana G., Ld. Ana e ben fiere conceree ce



Photo 1 Over view of DME 100 t/d plant

Table 1 Master plan of test operation

Ter	be	Pe • d	Da. ()	Ma • b.ec. e
R	100	Dec. 2003 Ja . 2004	1.5	Ojea a arear
R	200	J e 2004 J 2004	2	100% L ad .a .ea.
R	300	Se . 2004 Dec. 2004	2.5	E . ee. daefi (cae
R	400	J e 2005 Se . 2005	3	G c.a. ean ge 3 c
R	500	Oc . 2005 Dec. 2005	2	Pa ea ef cae ec
R	600	J e 2006 A . 2006	2.5	Add a ad a ced e ee da a

. . e de en le . f . e JFE P. cerrae a .c. a-DME De en le G., Ld., adfini, e decira f. e banc la rec. can rade le dec. /o c c a a a a a a a d o . . e a , . a e bee e a ed , e a, a ereac. I A . 2002, JFE E , ee, , a d N, $\ensuremath{\cdot\!\cdot}$ Sa $\ensuremath{\cdot\!\cdot}$ G , ece, ed, en de f e la decla de confre DME De el-• e G., Ld. a d be a o c c • • . . S a-.a-c, H. .ad Se .f. era e ea. De a ed dec. a d o c o f e e . . e e e ca .ed • de . e e e a c e . c • f JFE E . eeeon ean afleJFEGa .G (ca af 100 /d de • c a • . a . c c • . Photo 1. O e a a eas a cased for Dec. f. era e ea . . Ja . 2004. Af f c ed , ed , e , af e , a **Table 1**, d . . e e . d f . . . ca ea 2004 • 2006, e. ca • f. e ec • • ... be ca ed bade. 50 . . r f23. . . eac, a d a . . . de fe . ee . da a ... be o .ec ed filler aburg , e , fille ec , n filler au -• a • , e c, a, , a .

5.1 Outline of 100 t/d Demonstration Plant Equipment

A cere_{2} da a f e 100 /d de f a a cere_{2} Fig. 1. The de f a a a a bee defined ca de f a cere_{1} • e c.a. a. • f . e JFE P• cerr r. a a ar ar . e feedr• c. . T. e feedr• c. a a ar . r r • f. e JFE P• cerr ... be called a conda ce ... e ... a • ec .a. The reader (R

• f. c a e. Tec .ca de a.c, .c. d • e a • a ec. c • f · e de • c a • e · a , a e c c ed .ed • be e • ed• a • e • ccaca .

7. Conclusion

Du e. e. e. (DME) un a e fer un come e ec ed e eac acuca a un cara un ce ea fre. Thur en un ar der cobed le chica e e er ef DME a dur drin chiefea er ar afen, le fear er e fr a duec romercor (JFE Pencerro) unc le JFE Gen de en ed ar a una facture comentaria d