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Removal of CO_2 from Biogas by Using *Tert*-Butyl Peroxy-2-ethylhexanoate and Water

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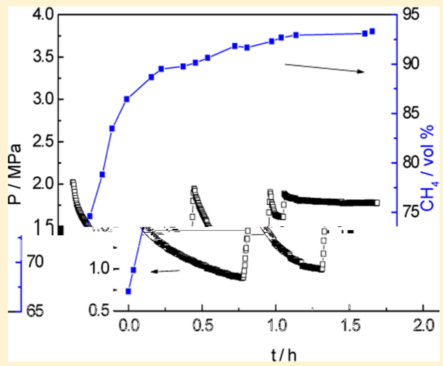
[illegible] 510640, C[illegible]

ABSTRACT: [illegible] -2- [illegible] (B[illegible]) [illegible] CO_2 [illegible] CO_2/C[illegible] (67.0 [illegible] %) [illegible] CO_2 [illegible] B[illegible] [illegible] 67.0% [illegible] 89.6%, [illegible] 2.23 [illegible] 26.0 [illegible] % B[illegible] [illegible] 287 [illegible] 2 [illegible] C[illegible] [illegible] 0.91, [illegible] CO_2 [illegible] 17.01 [illegible] 5.0 [illegible] % B[illegible]. [illegible], C[illegible] [illegible] 93.3%.



1. INTRODUCTION

[illegible][1] [illegible][2] [illegible][3] [illegible][4,5] [illegible][2] [illegible] (CO_2),[6,7] [illegible] (C[illegible]),[8] [illegible] (O_2),[9] [illegible][10] [illegible][11] [illegible][12,13] [illegible] (A),[14] [illegible][15,16] [illegible][17] [illegible][18]

[illegible] (C[illegible]) [illegible] (CO_2) [illegible][19] [illegible] CO_2 [illegible] CO_2 [illegible][20] [illegible] CO_2 [illegible] C[illegible] CO_2 [illegible][21,22] [illegible] CO_2 [illegible] C[illegible]–CO_2 [illegible][23,24] [illegible][25,26] [illegible]

[illegible][27] [illegible][28] [illegible] (C[illegible]),[29] [illegible] (BAB),[30] [illegible] (B[illegible])[31,32] [illegible][33,34] [illegible]

S[illegible] I[illegible]: [illegible] C[illegible] C[illegible] D[illegible] 2015

R[illegible]: D[illegible] 5, 2015
R[illegible]: [illegible] 29, 2016
A[illegible]: [illegible] 11, 2016
P[illegible]b[illegible]: [illegible] 11, 2016

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2. EXPERIMENTAL SECTION

2.1. Materials. 1 A C_4/CO_2 67.0 % C_4 33.0

Tab 1. E a Ma a U T W

C_4/CO_2	0.67 0.33	C.
B O	0.98	C.

% CO_2 B O. D 0.67 C_4 0.33 CO_2 ±0.001. ±0.001.

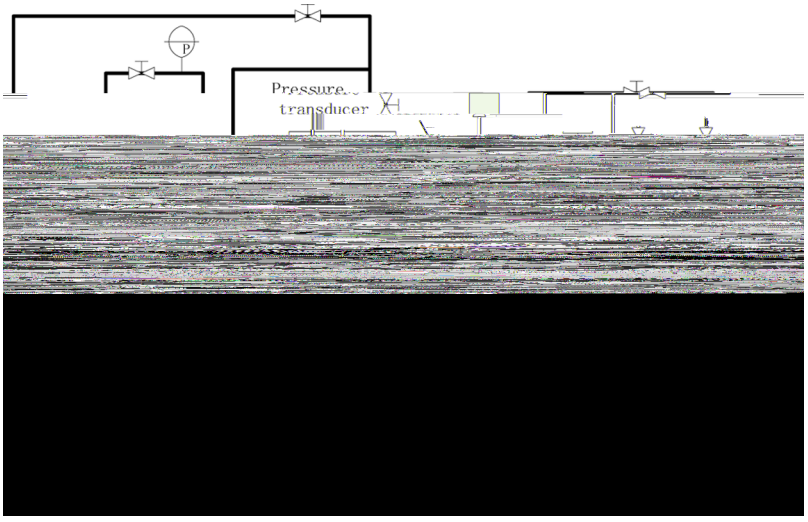
2.2. Apparatus and Methods. 1. 22.6 7.5 1000 20 . (A C., C). (- 100) 0.1 (C B-20) ±0.01 . (A 34970A) 20 . (C C9800: CD) ±0.001.

B C_4/CO_2 fi

2.3. Calculation Methods. *Number of Moles of Gas Consumed.* 1.

$$\Delta n = n_0 - n_t = \frac{P_0V_0}{z_0RT} - \frac{P_tV_t}{z_tRT} \quad (1)$$

0 0



F 1.

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t t t t t .

CH_4 Recovery and CO_2 Separation Factor. C 4 t t 2.

$$R = \frac{n_{CH_4}^{gas}}{n_{CH_4}^{feed}} \tag{2}$$

C 4 fi t C 4 t t t t t C 4 fi t C 4 t . t (t . .) t 3.

$$S.F. = \frac{n_{CO_2}^{H} \times n_{CH_4}^{gas}}{n_{CH_4}^{H} \times n_{CO_2}^{gas}} \tag{3}$$

CO_2 fi t CO_2, C 4 fi t C 4 t t t t t, CO_2 fi t CO_2 t t t t t.

3. RESULTS AND DISCUSSION

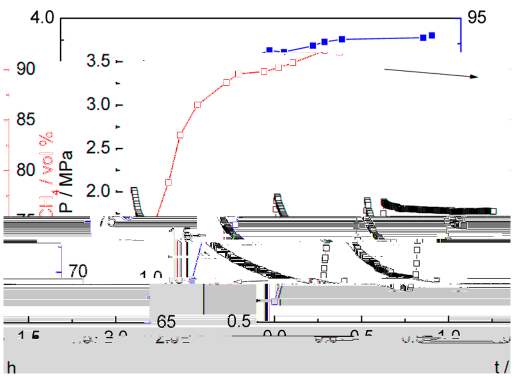
3.1. Effects of Experimental Conditions. t t t t 26 t % B O + 74 t % t + C 4/CO_2 t t t 287 290 2. t t t t t fi t 0.25 t t , t t t t t t . t t t t t 0.9 t 287 290 t 3.0 . t t t t .[35] BAB B O . 2 t t ffi 26 t % B O + C 4/CO_2 t ff t t t t t t t t ff t t t t t t . t , t t t t t . A 2, t t C 4 t t t 287 2.0 , t

t CO_2 t t t 287 1.0 . t t t CO_2 C 4/CO_2 t . C 4 0.86, t t t 290 4.0 , t C 4 t 0.8 t t . t , t t t 287 1.0–

Tab 4. Eff D ff TBPO C a S a a a 287 K a 2 MPa

B O/ t %	/	/	t /	t / %	C 4 t t	/ %	R	
5.0	287	2.0	0.095	26.5	82.73	0.91	17.01	
15.0	287	2.0	0.133	37.2	85.76	0.81	11.30	
26.0	287	2.0	0.128	35.6	83.06	0.80	5.48	

3.4. Effect of Recovering Pressure. 6 t t t t C 4 t t t



F 6. t t t C 4 t t t 26 t % B O t 287 .

26 t % B O t 287 . t 0.75 , t C 4 t t t 67.0% t 89.52%. t t t t t t t t 0.89 t t t B O t t t t t t t t t t t t t t t t t t t t C 4 t t t B 2 t t t C 4 t t 93.3%. t t t t C 4 t t

4. CONCLUSIONS

t t ff t B O t CO_2 CO_2/C_4 (67.0 %) t t t t t t t t t t t t t t t C 4 t t t 67.0% t 89.6%, t 26 t % B O 2.23 t t t 287 2 C 4 0.91, t CO_2 t 17.01 5.0 t % B O. B t t t t t t t t t t t t t C 4 t t t 93.3%.

AUTHOR INFORMATION

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@ t. . .

Notes

t fi t t.

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t t t C (51176051) t t t C t (2013 0032 2013 0036).

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