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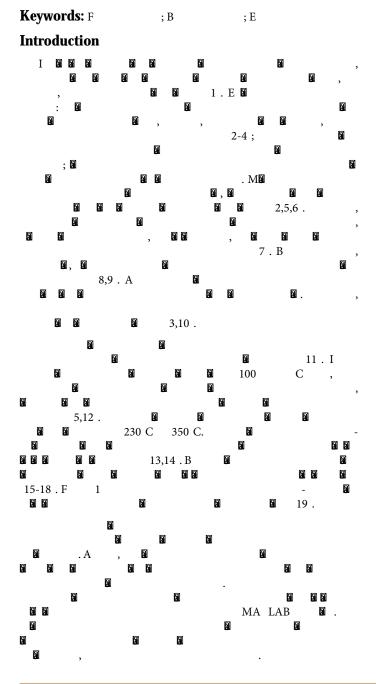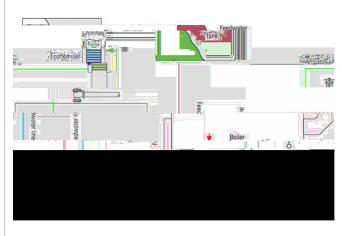
Research Article   **Open Access**

Evaluating the Effect of Economizer on Efficiency of the Fire Tube Steam Boiler

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Abstract

Keywords: F ; B ; E

Introduction

Methodology

Efficiency in steam boiler

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Results and Discussion

Efficiency and fuel's GCV

Ultimate Analysis	Boiler 1 (%)	Boiler 2 (%)
	92	92
Hydrogen	16	16
Nitrogen	0.5	0.5
	1.9	1.9
Sulphur	1.8	1.8
Moisture	0.5	0.5
	10000	10000
	2637.341	2637.341
	82	82
^{2})	90	90
	0.015	0.015
Wind speed (m/s)	3.7	3.7
Flue Gas Analysis		
	226	123
	30	30
CO_2	11.4	10.2
O_2	7.9	7.1

Table 1:

Input / Output Parameter	% Loss Boiler 1	% Loss Boiler 2
	100	100
	11.7131	5.2563
2. Loss due to hydrogen in fuel, L2	9.6797	9.0122
3. Loss due to Moisture in fuel, L3	0.0336	0.0313
4. Loss due to Moisture in air, L4	0.3443	0.154
	0	0
6. Surface heat losses, L6	1	1

GC⬛'

E ciency and ue gas temperature

F ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ . ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ 33-35 . F 3 ⬛ ⬛ B 1 ⬛ B 2 . ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ . I ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ , ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ .

⬛ ⬛ ⬛ ⬛ B 2 . ⬛ ⬛ ⬛ 100 C ⬛ ⬛ ⬛ ⬛ ⬛ B 2 ⬛ 7 ⬛ B 1 ⬛ 77.23.

Conclusion

I ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ . ⬛ ⬛ ⬛ ⬛ . ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ , ⬛ ⬛ ⬛ ⬛ . ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ 12% ⬛ ⬛ ⬛ ⬛ 77.2293% B 1 , ⬛ ⬛ ⬛ ⬛ ⬛ ; , ⬛ ⬛ 103 C ⬛ ⬛ . I ⬛ ⬛ ⬛ B 2 ⬛ 123 C, ⬛ ⬛ ⬛ ⬛ 6 ⬛ ⬛ ⬛ B 2 84.5462%, ⬛ 7.3169% . I ⬛ ⬛ ⬛ ⬛ ⬛ ⬛ .

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