

พิมพ์ต้นฉบับบทคัดย่อวิทยานิพนธ์ภายในกรอบสี่เหลี่ยมนี้เพียงแผ่นเดียว

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KEY WORD: INFECTIOUS WASTE, EMISSION GAS, INCINERATOR

CHAWAT NGAMJETTANAWAT : EMISSION GAS FROM INFECTIOUS WASTE INCINERATORS OF DIVISION OF ENVIRONMENTAL HEALTH, DEPARTMENT OF HEALTH. THESIS ADVISOR : ASSIST. PROF. THARES SRISATIT, Ph.D.
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The objectives of this study were to determine the efficiency of infectious waste incinerators of Division of Environmental Health, Department of Health and to detect pollutants emission from 9 selected hospital incinerators throughout in Thailand. It was found that sulphur dioxide (SO_2), carbon monoxide (CO), and nitrogen dioxide (NO_2) of all selected sources were within the emission standards set by Department of Industrial Works. However, 2 of 9 sources emitted particulate matter (PM) and hydrogen chloride (HCl) over the standard levels, whereas vinyl chloride monomer (VCM) and hydrogen fluoride (HF) were almost non-detected.

As for incinerator efficiency, it was found that 7 of 9 of incinerators were capable to destruct infectious waste with the feeding rate of 150 kg/hour. This true of incinerator, at the average, produces 6.52 % ash and consumed 0.404 litre of diesel oil per kilogram of waste. Average of detention time in secondary chamber was 0.35 second, which was lower than the design (0.5-1.0 second). Increasing the detention time of combustion could be done by reducing air feeding rate of burners which diminish the pollutants from incomplete combustion.

At 95 % confidence limit., increasing the efficiency of incinerator by reducing feeding time had tendency to produce more air pollutants, such as PM ($r = -0.8141$); CO ($r = -0.7381$), and VCM which depended on the amount of PM ($r = -0.8141$) To achieve the set efficiency, however, loading of infectious waste should be less than 40 kg for each feeding. (adj $R^2 = 0.7391$)

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