Res. Rev. J Mat. Sci. 2017, 5:7
DOI: 10.4172/2321-6212-C1-012

High-temperature corrosion in incinerators of medical waste - A review

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Statement of Problem: Medical Waste Incinerators are used in destroying medical waste such as blood-drenched bandages, culture containers, abandoned surgical equipment's, needles, removed body organs, lancets, surgical gloves and removed body organs. If not incinerated properly they are capable of transmitting diseases such as HIV, Hepatitis, and life taking infections. Medical waste being rich in high calorific value and chlorine, on combustion these wastes produces chlorides of sodium and chlorides which attacks the metallic parts of incinerators. The purpose of this study is to summarize the results of available research for prevention of high-temperature corrosion in incinerators.

Methodology: This paper describes various thermal spray coating processes adopted by researchers to combat the high-temperature corrosion in medical waste boilers with particular emphasis on super nickel alloys.

Findings: Hot corrosion is a severe problem in medical waste incinerators which causes a shutdown of heat exchangers plants used for extracting heat of flue gasses produced by waste.

Conclusion & Significance: Hot corrosion can be mitigated to some extent by altering the material used for making superheater tubes and by separating the surfaces of metals from corrosive environments by spraying thermal coatings.

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