

# Hot Corrosion Performance of Stellite-6 Coating under Simulated Bio Fuel Fired Boilers Environment

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**Abstract**—Bio-fuel is one of the earliest sources of energy with very specific properties. Bio fuels are widely burnt to produce heat which can be utilised to produce electricity. Combustion of bio- fuel requires very high temperature and it also produces salt species which enhances the corrosion problem in operation of boilers at high temperature. To obviate this problem, bare and stellite-6 coated GrA1 steel samples were studied under simulated bio-fuel fired boiler environments (40%Na<sub>2</sub>SO<sub>4</sub>-10%NaCl-40%K<sub>2</sub>SO<sub>4</sub>-10%KCl, Na<sub>2</sub>SO<sub>4</sub>-10%NaCl and Na<sub>2</sub>SO<sub>4</sub>-40%NaCl) at 900°C for 50 cycles. Weight change measurements were done to know the corrosion kinetics. SEM/EDS and XRD techniques were used for characterisation of corrosion products.