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Microstructure evolution at different cooling rates of a low carbon microalloyed steel

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Rust is the reddish brown oxide of iron formed by the action of moisture and oxygen on the metal. It is an electrochemical corrosion which weaking the iron structures. It was estimated that the corrosion alone causing a loss of over $5000 bn USD to global economy every year. According to a recent report of NACE the corrosion cost in any developing countries predicated by 5% of the GDP, for India the cost of corrosion is estimated to be Rs 1.52 lakh crores per year. All available methods for rust removal and corrosion prevention are having their own limitations. Therefore, it is an urgent need to find out suitable method to check the corrosion. A fungal based biological derustification process was observed and reported by us already. This present investigation deals with our further experiments and experiences on the fungal based technology for iron rust removal. The derustification process was repeated once again to conform the reproducibility of the technology in polybag fermenters. Rusty iron mesh which were rolled in the form of cylinders were placed in the fermenters to expose them to the aerosol particles generated by the fungus. The rate of derustification was noted. Attempts were also made to enhance the aerosol generation from the substrate (straw) by coconut water supplementation. It was observed that the rusty metals placed in the supplemented substrate where derusted quickly then the raw substrate. Various level of supplementation was also correlated with rate of derustification. Further works on rust removal process are under progress.

Biography

Elena Brandaleze has completed her PhD in National University of Rosario. She is the Head of the Metallurgy Department of the Tecnological National University from Argentina. She also is the vice-Director of DEYTEMA Center at the same university. She has published more than 40 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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