



Development of Refractory Systems to Support the Steelmaking Process

AUTHOR OF POSTER:
Patrick Mayne

INSTITUTION:
Swansea University

ABSTRACT:

Refractory linings are commonly used in the steel industry and perform a critical role with regards to energy conservation and product quality. An industrial study is presented in which thermocouples have been installed into the refractory linings of in-service steel plant assets. Temperatures of linings under normal operating conditions were monitored in real time using Long Range Radio Wide Area Network (LoRa WAN) wireless communications technology and correlated with non-contact thermography measurements. This data is being used to validate and inform the output of a three-dimensional FEM model of the same refractory lined asset, enabling the model to better simulate the impact any changes involving refractory material selection might have on the asset's overall effectiveness.



Patrick Mayne



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