Materials Processing Institute

CASE STUDY

Wireless Sensor Testing for use in Steelmaking and Casting Areas

INTRODUCTION

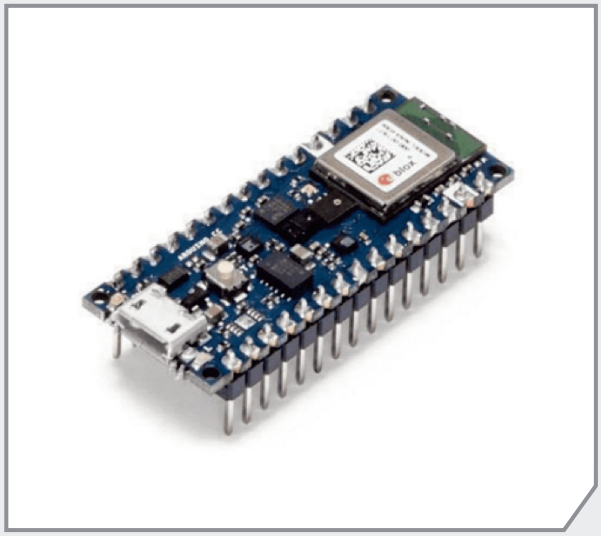
Wireless technologies have contributed to Industry 4.0 leading to improvements in range, reliability, data rates, power consumption, security and cost.

PROJECT REQUIREMENT

The client wanted to establish whether wireless sensor technologies could be used in Steelmaking and Casting areas and to evaluate the installation of RFID tags on a steel plant ladle fleet.

PROJECT ACTIVITIES

A wireless sensor module was tested in the Institute's Normanton Plant on the casting mould under the mould canopy and the accelerometers used to monitor the mould oscillation. Software was written to calculate oscillation stroke length, harmonic distortion, and oscillation frequency. Once complete this software was downloaded and an android phone was used to display information which worked well up to a few metres away from the casting mould.



Wireless sensor tested in the Normanton Steel Plant

Bare and insulated RFID tags

PROJECT OUTCOME

This successful trial has demonstrated the industrial potential for low-cost wireless sensors. The installation and monitoring of RFID tags has demonstrated that the tags can work in steelmaking and casting areas.

BENEFITS

Data gathered from the sensors can be used to reduce energy costs, increase refractory lining lives, optimise thermal flight paths, maximise capital asset life and improve health and safety.

Address:
Materials Processing Institute
Eston Road
Middlesbrough
TS6 6US
United Kingdom

Contact Details:
t: +44 (0)1642 382000
enquiries@mpiuk.com
www.mpiuk.com