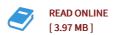




Optimization of In-line Defect Detection by Eddy Current Techniques

By Rahman, Mehbub-Ur

Condition: New. Publisher/Verlag: kassel university press | This thesis presents innovative and advanced electromagnetic techniques for the in-line inspection of hot wire steel. The hot wire inspection procedure is performed with the eddy current (EC) sensor technique. Any type of crack on the upper surface of the steel wire disturbs the eddy current distribution which can be detected by the eddy current sensors. However, the eddy current distribution is only weakly influenced by cracks which are parallel to the wire, so-called longitudinal cracks. The conventional eddy current sensors cannot detect these cracks properly. To detect such longitudinal cracks a number of new EC sensors have been developed and successfully tested. The modeling of the EC sensors and inspection techniques are numerically performed by setting up the governing equations for eddy current problems and then the dfferential, as well as the integral equations are solved with a suitable numerical method. A proper selection of the numerical technique plays an important role in successful simulation of the eddy current inspection procedure. Different numerical methods - the finite integration technique (FIT), the finite element method (FEM) and the boundary element method (BEM) are used to model this NDT (non-destructive testing) situation. The presented work...



Reviews

It becomes an amazing pdf which i actually have at any time read through. This can be for all those who statte there had not been a worthy of reading through. You wont sense monotony at anytime of your own time (that's what catalogues are for relating to should you check with me).

-- Claud Kris

If you need to adding benefit, a must buy book. It is writter in easy words and phrases and not difficult to understand. Your daily life span is going to be transform when you complete reading this article publication.

-- Ricky Leannon