

Automated Detection of MT Indications with CRACKVIEW AI

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Magnetic particle testing (MT) has been used in non-destructive testing for over 80 years. Although there were attempts to automate it in the last century, it is still largely done manually today. Many forges and foundries already have a very high degree of automation in production, so that most of the personnel costs are spent on the final inspection. Especially in high-wage countries, these companies are under great cost pressure and exhibit the problem of finding enough qualified personnel and keeping costs low at the same time. As a result of this growing pressure, there has been an increasing number of enquiries from test system manufacturers for fully automated MT systems in recent years. The advances in artificial intelligence (AI) in the last decade, show a promising way to realize the automated evaluation of indications in MT systems. The AI method of deep learning uses neural networks, that simulate the working principle of a human brain, is trained by a large amount of data. In case annotated images of crack indications. After the training the network is capable of detecting crack indications independent of the part geometry or crack position on the part itself. This presentation shows the CRACKVIEW AI system developed by KARL DEUTSCH for the automated evaluation in magnetic particle testing and presents results from its application.