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MATERIAL CHARACTERIZATION BY PULSED EDDY CURRENTM.Zergoug,N.Boucherrou

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Abstract: The Pulsed eddy current (PEC) application in the industrial domain is veryweak compared to conventional eddy current. Its use in detection of the defects, particularly inthe determination of corrosions .The contained information in the received signal makes itpossible to determine several parameters with an aim of analyzing material. The resultsobtained explain the behaviour of the Pulsed Eddy Currents and their influences in variouselectromagnetic parameters on the inspection. We will evaluate the aptitudes and theperformances of this technique in the determination of the characteristics materials inparticular. Also we have studied the sensitivity of the defects and other parameters in theinspection by the pulsed method and we have showed the detection of the defects into thesecond and third layers. The originality of this work consists of the material evaluation. Theapplied NDT PEC methods can characterize microstructure types, micro structural changes,hardness changes. The objective of our work is to evaluate some metallurgic characteristics bynon-destructive methods. The characterization of the structure modifications by PEC allows todetect mechanical and metallurgical parameters of materials

Keywords : Pulsed eddy current, PEC, CF, NDE, NDT