1. Record Nr. UNINA9910960442403321 Autore Maldague Xavier P.V Titolo Nondestructive Evaluation of Materials by Infrared Thermography / / by Xavier P.V. Maldague London:,: Springer London:,: Imprint: Springer,, 1993 Pubbl/distr/stampa **ISBN** 1-4471-1995-9 Edizione [1st ed. 1993.] 1 online resource (XXXII, 207 p. 21 illus.) Descrizione fisica 620.1 Disciplina Mechanics, Applied Soggetti **Electronics** Materials - Analysis Condensed matter **Engineering Mechanics** Electronics and Microelectronics, Instrumentation Characterization and Analytical Technique **Condensed Matter Physics** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Bibliographic Level Mode of Issuance: Monograph Nota di bibliografia Includes bibliographical references and index. Nota di contenuto 1 Overview of Nondestructive Evaluation (NDE) Using Infrared Thermography -- 1.1 General Considerations -- 1.2 Active and Passive Approaches in TNDE -- 1.3 New Materials -- 1.4 Detectors for Infrared Imaging -- 1.5 TNDE: Pros and Cons -- 2 Theoretical Aspects -- 2.1 Radiometry -- 2.2 Heat Transfer Modelling -- 3 Experimental Apparatus -- 3.1 Description of the System and Intended Use -- 3.2 Acquisition Process: Signal Restoration -- 3.3 System Calibration -- 4 External Thermal Stimulation: Methods and Image Processing -- 4.1 General Considerations -- 4.2 Study of Graphite Epoxy Composites: Procedures, Investigation, Processing -- 4.3 Study of Aluminium Laminates: Procedures, Investigation, Processing -- 4.4 Automatic Defect Detection -- 5 Internal Thermal Stimulation: Methods and Image Processing -- 5.1 General Considerations -- 5.2 Case Study I: Evaluation of Corrosion Damage to Pipes -- 5.3 Case Study II:

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## Sommario/riassunto

With national trade barriers falling, causing the expansion of the competitive global market, the question of quality control has become an essential issue for the 1990s. The time where the promise was to replace a product if it does not work seems to have passed; what is more important now is not so much a reduction in what is going wrong but an increase of what is going right the first time (Feigenbaum 1990). This new trend is sometimes referred to as total quality. Among the many advantages of this zero-defect manufacturing policy, we can enumerate (Laurin 1990): superior marketability of wholly de-pendable products, enormous gain in productivity, elimination of waste-ful cost in replacing poor quality work and retrofitting rejected products from the field. Although total quality is a relatively new and attractive concept for mass products such as cars, consumer electronics and personal computers, in many fields, mainly aerospace and military, it has been the rule for years because of security reasons.