



applied sciences



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Novel Approaches for Nondestructive Testing and Evaluation

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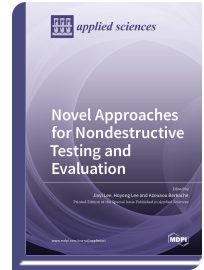
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Nondestructive testing and evaluation (NDT&E) is one of the most important techniques for determining the quality and safety of materials, components, devices, and structures. NDT&E technologies include ultrasonic testing (UT), magnetic particle testing (MT), magnetic flux leakage testing (MFLT), eddy current testing (ECT), radiation testing (RT), penetrant testing (PT), and visual testing (VT), and these are widely used throughout the modern industry.

However, some NDT processes, such as those for cleaning specimens and removing paint, cause environmental pollution and must only be considered in limited environments (time, space, and sensor selection). Thus, NDT&E is classified as a typical 3D (dirty, dangerous, and difficult) job. In addition, NDT operators judge the presence of damage based on experience and subjective judgment, so in some cases, a flaw may not be detected during the test. Therefore, to obtain clearer test results, a means for the operator to determine flaws more easily should be provided. In addition, the test results should be organized systemically in order to identify the cause of the abnormality in the test specimen and to identify the progress of the damage quantitatively.



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