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# A Diagnostic 'tool' to prevent the consequences of material failure

*Thursday, 14 July 2011 17:00 (2 hours)*

<p>In materials' manufacturing, evaluation and/or characterization is a key final stage in the production process. This quality assurance tests whether the product meets an industry norm or specified standard required by the customer. The evaluation is also required on machinery / plant parts that are already in operation. The parts are periodically 'tested' to ascertain as to whether they can still function safely and as originally designed. The evaluation, characterization, testing is conducted using techniques that do not damage these parts / materials. This novel way of materials' examination; referred to as Non-Destructive Testing / Evaluation (NDT/E); is finding increasing applications is numerous industries. This paper focuses, first, on the use of NDT/E in selected industries and its critical nature in the safe operation of plant machinery and structures. Secondly, an overview of the education and training required in NDT/E is discussed. The qualification offered at the Vaal University of Technology (VUT) and its impact on the NDT/E profession in South Africa is reflected upon. Thirdly, the rewards of an NDT/E career are discussed. This is contrasted with the perceived low profile of NDT/E amongst practicing engineers in South Africa. Lastly, an argument for the urgent need of a legislative framework for the regulation and recognition of NDT/E qualifications and certification in South Africa is advanced. It is emphasized that this is a necessary measure to have accountability and a code of ethics entrenched in this growing profession.

## Level (Hons, MSc, <br>   PhD, other)?

Industrial Physics

## Consider for a student <br>   award (Yes / No)?

no

## Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

yes

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