

# Neutron tomography as a reverse engineering method applied to the IS-60 Rover gas turbine

- [Thomas H. Roos](#)
  - [Robert L. Quin](#)
  - [Frikkie C. de Beer](#)
  - [Robert M. Nshimirimana](#)
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- <sup>a</sup> CSIR DPSS, P.O. Box 395 0001, Pretoria, South Africa
  - <sup>b</sup> RLQ Design, P.O. Box 50624 0149, Wierda Park, South Africa
  - <sup>c</sup> Necsa, Radiation Science, P.O. Box 582 0001, Pretoria, South Africa

## Abstract

Probably the most common method of reverse engineering in mechanical engineering involves measuring the physical geometry of a component using a coordinate measuring machine (CMM). Neutron tomography, in contrast, is used primarily as a non-destructive testing technique. This paper, however, explores the use of this technique in its tomographic application (neutron CAT scanning mode) as a reverse engineering tool, particularly for complex internal geometries, as it has the added advantage of being a non-destructive and non-invasive method. Several components from an IS-60 Rover gas turbine were scanned using neutron tomography and through the analyses it was demonstrated that the technique may be promising for reverse engineering purposes.

## Keywords

- Reverse engineering;
- Neutron tomography;
- Necsa;
- SAFARI-1

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