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## Fast Neutron Radiography at an RFQ Accelerator System

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**Abstract content &nbsp; (Max 300 words)<br><a href="http://events.saip.org.za/getFile.py/a" target="\_blank">Formatting &<br>Special chars</a>**

Improvements have been made to the 4MeV Radio Frequency Quadrupole Accelerator (RFQ) at Necsca and the HEBT focusing system. The option to change the target configuration to a solid boron carbide target has been made, for the specific purpose of producing a fast neutron source (1 - 10 MeV at  $10^{11}$  n.s<sup>-1</sup>.cm<sup>-2</sup>) and two distinct gamma rays (4.43 MeV and 15.11 MeV). This interrogating radiation has been used for studies in the field of cultural heritage and fluid flow, by conducting fast neutron radiography (FNR) on samples from the respective disciplines. The nature of the developments will be highlighted and the investigation into anthropology and the density evolution in mineral systems, presented, with the comparisons made to theoretical simulations and experiments conducted at the fast neutron facility at Physikalisch Technische Bundesanstalt, Braunschweig.

**Apply to be considered for a student &nbsp; award (Yes / No)?**

No

**Level for award (Hons, MSc, &nbsp; PhD, N/A)?**

PhD

**Main supervisor (name and email) and his / her institution**

Dr Chris Franklyn, Chris.Franklyn@necsca.co.za, The South African Nuclear Energy Corporation

**Would you like to submit a short paper for the Conference Proceedings (Yes / No)?**

Yes

**Please indicate whether this abstract may be published online (Yes / No)**

Yes

**Primary author:** Mr DANIELS, Graham (Necsa)

**Co-authors:** Prof. BUFFLER, Andy (University of Cape Town); Dr FRANKLYN, chris (necsa)

**Presenter:** Mr DANIELS, Graham (Necsa)

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