IMAGING WITH RADIATION: 4th South African Biennial Conference

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Positron Emission Imaging

Content

Imaging techniques that employ radio-tracers have application in the medical industry through Positron Emission Tomography (PET), which focusses on identifying the presence of cancers, blood flow, chemical composition and identifying changes in metabolic processes. The development of Positron Emission Particle Tracking (PEPT) has increased the scope of application to measure particle behaviour in flowing and granular systems, with specific applications in tumbling mills and flowing systems that have potential impact in an industrial setting.

PET and PEPT results obtained from experiments conducted at PCIF/NUMERI (Necsa) and UCT/iThemba-LABS respectively, will be presented showcase the effectiveness of this emission radiography technique. Furthermore, results acquired using PEPT will be compared to results acquired when using Fast Neutron Radiography (FNR), highlighting the complementary information observed between these two techniques.

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