



Contribution ID: 398

Type: Poster

## THE EFFECT OF SILICON CARBIDE CRYSTAL STRUCTURE TRANSFORMATION ON GASEOUS FISSION PRODUCT RELEASE FROM THE TRISO COATED PARTICLE OF THE PEBBLE BED MODULAR REACTOR'S FUEL PEBBLE

The effectiveness of silicon carbide (SiC) to act as a barrier to migration of gaseous fission products (FP) through the (Tri-Isotropic) TRISO coated particle out of the fuel pebble depends on its ability to maintain its crystal structure. However, analyses of irradiated fuel pebbles indicate that the crystal structure of the SiC is greatly affected by the duration of irradiation, irradiation temperature and the neutron flux of the reactor causing the crystal structure to undergo structural changes (amorphisation), changing from  $\alpha$ -SiC to  $\beta$ -SiC. The diffusion of fission products through the SiC layer of the TRISO coated has been found to follo

**Primary author:** Mr LEOTLELA, Mosebetsi (University of Witwatersrand)

**Presenter:** Mr LEOTLELA, Mosebetsi (University of Witwatersrand)

**Track Classification:** Track F - Applied and Industrial Physics