



Contribution ID: 37

Type: **Presentation**

Diffusion of fission products through silicon carbide

Fuel elements of modern high-temperature nuclear reactors are encapsulated by CVD-layers of pyrolytic carbon and silicon carbide to reduce fission product release. The aim of this study is to obtain information on volume and grain boundary diffusion as well as on the influence of radiation damage. For this purpose relevant isotopes were implanted in poly and single crystalline SiC samples at temperatures ranging from room temperature to 900 K. Diffusion coefficients were obtained from the broadening of the implantation profiles after isochronal and isothermal annealing studies up to 1900 K, using RBS analysis and electron microscopy.

Primary author: Prof. FRIEDLAND, Erich (University of Pretoria)

Co-authors: Prof. MALHERBE, Johan (University of Pretoria); Dr VAN DER BERG, Nic (University of Pretoria)

Presenter: Prof. FRIEDLAND, Erich (University of Pretoria)

Track Classification: Track A - Condensed Matter Physics and Material Science