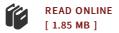


## Neutron Detection Utilizing Gadolinium Doped Hafnium Oxide Films

By Bryan D. Blasy

Biblioscholar Nov 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x4 mm. This item is printed on demand - Print on Demand Neuware - Gadolinium (Gd) doped hafnium oxide (HfO2) was deposited onto a silicon substrate using pulsed laser deposition. Synchrotron radiation was used to perform Gd L3-edge extended X-ray absorption fine structure (EXAFS) measurements on 3%, 10%, and 15% doped HfO2 samples. The interatomic distances determined from Fourier transformation and fitting the data show Gd occupying the hafnium site in the HfO2 lattice, there was no clustering of Gd atoms, and the Gd ion retains monoclinic local symmetery for all levels of doping. Current as a function of voltage experiments identified the films as having poor diode characteristics with high leakage current in the forward bias region. However, a proper bias (0.5 V) for the purpose of neutron detection was identified and applied across the diodes. Using a high, non-varying neutron flux in a nuclear reactor, Gd doped HfO2 was able to be used in a detection system and displayed the ability to detect neutrons. 60 pp. Englisch.



## Reviews

It is great and fantastic. Yes, it really is engage in, nevertheless an amazing and interesting literature. You can expect to like how the author write this pdf.

## -- Roma Prohaska MD

A really wonderful book with perfect and lucid information. I actually have study and i am sure that i am going to gonna read through once more yet again in the future. I am pleased to explain how this is actually the finest ebook we have study inside my personal daily life and might be he finest book for at any time. -- Kristy Stroman