



Contribution ID: 138

Type: **Poster**

Sitall UCN-Messung

Tuesday, 12 October 2010 17:00 (2 hours)

Preliminary laboratory researches have shown, that a polycrystalline glass ceramic named Sitall could be a very suitable material for future UCN-storage experiments. This material provides high mechanical and temperature strength plus good electric isolation characteristics and an effective wall potential for UCN of $V=125$ neV.

Our aim was to prove the UCN storage characteristics of a Sitall glass-ceramic bottle produced from SRIOMT (Moscow, Russia). The cylindrical storage bottle was installed at the UCN-source C of the reactor TRIGA Mainz. After different cleaning processes, such as backing out and RF-discharge with helium, a storage time of 160(2) s was measured in a one-day experiment. The main UCN-losses arise from absorption and upscattering at the surface of the Sitall.

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Session Classification: Poster Session