



Contribution ID: 35

Type: Talk (remote)

Study of the radiation aging of materials with using of beam of the fast neutrons at BINP SB RAS

Thursday, 13 April 2023 17:20 (20 minutes)

The BINP SB RAS, in collaboration with Novosibirsk State University, has upgraded facility for boron-neutron capture therapy for the possibility of radiation tests on beam of fast neutrons with the integral flux up to 10^{14} neq/cm².

In 2022 the experiment on the study of the radiation aging of optical fibers for the laser calibration system of electromagnetic calorimeter CMS (CERN, Switzerland) was carried out. The uniqueness of this radiation tests in contrast to irradiation in reactor is the precise control of the level of the accumulated dose with continuous measuring of degradation fiber transparency.

It has been demonstrated for the first time that at the BINP SB RAS it is possible to operate with such doses using of neutron beam. It could be in further used for the wide range of radiation test tasks, related with the development of facilities for HEP.

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Session Classification: Room 1 (Laby Theatre)

Track Classification: WG2: Detector technology development