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Modular Neutron Detector on the Basis of Composite Scintillators

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Modular neutron detector on the basis of composite scintillators which may be used in creation of radiation monitors with a large sensitive surface was suggested. Composite scintillators are composed of dielectric gel as a basis where granules of scintillating substance, for example, gadolinium granules containing scintillators, are introduced. Thermal neutron converter, which contains 6Li or 10B isotopes, is additionally introduced when using granules of scintillators on the basis of binary compounds of zinc and selenium, or sulfur. Characteristics of the detector with the size of the sensitive surface 100x100 cm2 are obtained by the simulation on GEANT4. They allow using it as a part of GAMMA-400 space observatory.

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