

HIGH-SENSITIVITY BROADBAND INFRA-RED MONITOR OF SPATIAL STRUCTURE OF RELATIVISTIC BUNCHES AND THERMAL FIELDS

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The monitor is intended for registration of spatial distribution of density of energy of pulsing radiation of thermal fields and bunches of relativistic electrons and protons in a wide spectral range 0,4 - 4 mkm. In a measuring system of a monitor effective means of active and passive increase of the relation of a useful signal to noise, in view of particular conditions and requirements are used. The measuring channel can confidently allocate a useful signal on a background of handicaps, the size of which can make about 20 kE in a pulse [1]. The accuracy of measurement of amplitude of a signal of radiation makes 0,2% of maximum significances of a registrar scale.

Reference:

1. Mal'tsev A.A. - Phys. Part. Nucl. 1996. V. 27. N 3, P. 797.



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ELEMENT-LOADED ORGANIC SCINTILLATORS FOR PARTICLE PHYSICS

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Organic scintillators are widely used in experiments dealing with different fields of particle physics. One of the most important advantages of these materials is a possibility of required modification of scintillator properties, which is necessary for development of high-efficiency detectors for selected types of radiation, as well as for using of the same material simultaneously as a target and a detector. Such a possibility may be realized by introducing of additives contained chosen elements (or their isotopes) in the scintillation compositions.

The interest in development of new element-loaded organic scintillators is considerably growing now. The reasons of such the interest are coming plans to construct new large-scale detectors for neutrino physics and astrophysics, searching for double beta decay and Dark Matter, cosmic rays detection, design of satellite-based detectors, investigation in the fields of neutron and high energy physics, etc.