

WEARABLE DOSIMETER FOR NEUTRONS



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A real time electronic dosimeter to control neutron exposure of radiation workers. Thanks to the innovative design, the energy and angular dependences are very limited. The high sensitivity makes it suitable for time-integrated routine monitoring as well as the surveillance of task-related specific operations.



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DESCRIPTION :

Neutron exposure constitutes an occupational hazard in the nuclear, civil, oil industries and in particle accelerators, widely used in medical field. In most state-of-art techniques, dosimetric information is integrated for a long period, usually a month or more, and acquired only in the end of the period. A direct reading device would be essential for the optimization of radiation protection and the immediate identification of critical situations. Existing devices also exhibit very high dependence on neutron energy,, which makes them very inaccurate in workplaces where energies can vary in a wide range, up to 10 orders of magnitude. The wearable dosimeter object of the invention overcomes the state of the art, as it introduces an innovative direct-reading real-time device with unprecedented accuracy.

ADVANTAGES:

- Wearable and compact device;
- Real-time monitor;
- Application in a wide energetic range (from thermal neutrons to energy of about 20 MeV);
- It satisfies the IEC performances criteria.

APPLICATIONS:

Neutron personal dosimetry in:

- Nuclear, civil and oil industry;
- Particle accelerators;
- Medical field;
- Nuclear waste.

