

New Gamma Viewfinder Concept

For gamma radiation fields, current “gamma pictures” are created nowadays by commercially available “gamma cameras”, using either segmented or pin-hole collimators, as well as Compton cameras, thus creating expensive, large and slow detectors, rather unsuitable to be used for verification of undeclared activities. A new concept of “gamma vision”, based on a fully different concept of a position sensitive detector is presented. In this concept, developed by INVAP each detection element measures the gamma rays in a defined solid angle, using a lobular, compact, lightweight and high efficiency collimator (at significantly lower costs). Unlike existing gamma cameras, the presented gamma vision concept don’t use the usual concept of lens + focus. For this reason- and differentiating it from existing gamma cameras-, the system is called Gamma Viewfinder (patent pending). INVAP concept is similar to that of composed fly-eyes, producing a gamma image using a set of adjacent gamma sensors, each sensor including its own high efficiency viewing lobe overlapping neighbor elements, in an assembly that lacks of common focus. A suitable deconvolution of the incident gamma field using math processing provides increased image sharpness, efficiency and speed.

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