

NASA TECH BRIEF



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Plastic Scintillator Converts Standard Photomultiplier to Ultraviolet Range

The problem:

To provide a stable scintillator that can be easily applied to the glass window of a standard photomultiplier tube (which is sensitive to the visible portion of the spectrum) in order to adapt it to the detection of ultraviolet radiation. Conventional scintillators (e.g., sodium salicylate) are relatively unstable and difficult to handle. Photomultiplier tubes employing quartz windows, which are transparent to ultraviolet radiation, are expensive and insensitive to visible radiation.

The solution:

Attach a commercially available plastic scintillator to the glass window of a standard photomultiplier tube.

How it's done:

The plastic scintillator (0.0625-inch thick) containing phosphors in polyvinyltoluene, is attached to the glass window of the tube with plastic tape. The peak fluorescence of this scintillator occurs at 4300 ang-

stroms. When the scintillator is used in conjunction with a type 9514B photomultiplier tube, the system is sensitive to radiation in the range from 100 to 2000 angstroms, with peaks at approximately 300 and 1600 angstroms.

Notes:

Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
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Cambridge, Massachusetts, 02139
Reference: B66-10108

Patent status:

No patent action is contemplated by NASA.

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