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NASA TECH BRIEF



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UV Detector Monitors Organic Contamination of Optical Surfaces

Certain outgassed products of organic materials tend to degrade the optical properties of lenses and lens systems, mirrors, or windows, particularly in closed systems. Such contamination is often difficult to monitor, since conventional photodetectors must be shielded from ambient light. However, silicon carbide (SiC) ultraviolet detectors have a peak spectral response at 2800 to 3800 angstroms and thus are insensitive to visible light and are nearly solar blind. Such detectors can produce a photovoltage of 1 millivolt to 1.6 volts, depending on the incident flux density. The obvious advantage of such detectors is that system contamination can be monitored during normal operation without interference to the operator and without the problems of excluding ambient light from the detector.

SiC detectors could be employed to determine the effects of contamination on UV transmittance and reflectance measurements in laboratory thermo-vacuum systems. Also, the detectors could be attached di-

rectly to the lenses of various optical systems to continuously monitor changes due to contamination buildup. Typical uses are in various research laboratories, television and photographic studios, and astronomical observatories.

Note:

No additional documentation is available. Questions may be directed to:

Technology Utilization Officer
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Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

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