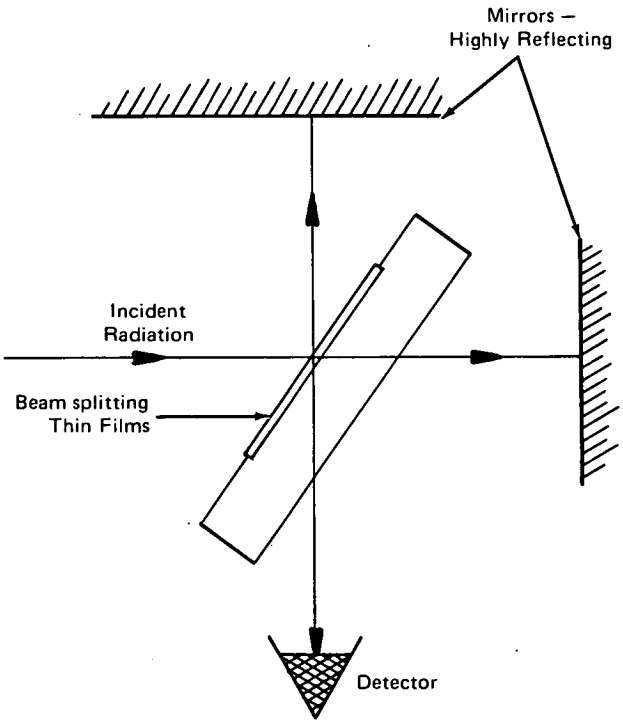
NASA TECH BRIEF

Goddard Space Flight Center

Unsupported Thin Film Beam Splitter



The problem:

Light path compensating devices in infrared spectral instruments are costly and require background filtering.

The solution:

A multilayer beam splitter film system yielding nearly equal broadband infrared reflectance and transmittance in the 5 to 50 micron spectral region has been developed which will significantly reduce system size and cost.

How it's done:

The use of a thin pellicle of Parylene N (which has a low reflective index) as an active component in the beam splitter design eliminates the need for light path compensating devices. The beam splitter system, as part of an interferometer, is composed of a set of beam splitting films attached to a suitable frame. The lack of a path length compensating element is the result of the extreme thinness of the beam splitting film structure. This requires the Parylene N film to have a specific optical thickness in order to optimize spectral performance.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Goddard Space Flight Center
Code 207.1
Greenbelt, Maryland 20771
Reference: TSP72-10471

Patent status:

No patent action is contemplated by NASA.

Source: Roy C. Bastien and R. J. Scheuerman of
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Category 02