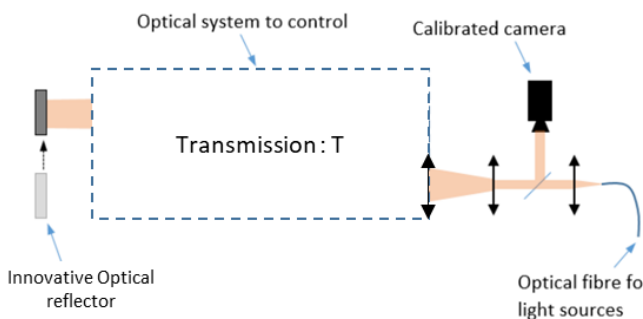




Innovative optical retroreflector for new calibration method

Bertin technologies and F4E have developed a calibration method based on an innovative optical retroreflector. The device is manufactured from a single material using a simple process and is adaptable to many optical configurations and compatible with visible, IR and radar wavelengths. This methodology can be applied to all areas using optical diagnostics such as high radiation environments like nuclear, space: optical based satellite, furnace, other wavelength systems.

The technology



The ITER CXRS core will provide spatially resolved measurements of plasma parameters, notably thanks to optical diagnostics. Given the cramped conditions and high radiation, the stability of a calibrated light source for years is a real challenge in the field of nuclear fusion and on ITER. Bertin Technologies and F4E have therefore developed a new calibration method based on an optical retroreflector to ensure the measurement of the transmission efficiency of its different optical components!

Reliable measurement without complex optical devices manufactured by a simple process

The device consists of a single material, made from a very simple process that allows reliable measurement of transmission over time while avoiding the use of a complex optical device. Note that the device is not limited to visible wavelengths and is compatible with infrared and radar. Finally, the configuration and integration of the device is adaptable on demand.

Ideal application for extremely constrained and/or high radiation environments

This methodology can be applied to all areas using optical diagnostics where the transmission efficiency needs to be controlled (by transmission or reflection). This device is ideal for environments where the installation of a calibrated light source is extremely constrained/costly, either due to smallness or access, viability or cost (direct or indirect). This is particularly the case, for example, in high radiation environments such as nuclear, space: optical based satellite, oven, system at other wavelengths (IR, Radar, IR barrier). It should be noted that a reverse use, for deposition measurement (affecting transmission) is also possible.

Collaboration opportunities

Bertin technologies is available for all requests and services interested in this know-how.

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