LICENSING OPPORTUNITY: OPTICAL METER AND USE OF SAME

DESCRIPTION

Problem

The NIST Optical Meter eliminates the issue of depending on most of the optical power being absorbed by the sensor, which allows for the technology to obtain high-accuracy power monitoring during laser use.

Invention

With this technology, high power laser beams from 1-kilowatt (kW) up to 140 kW (and beyond) can be measured accurately using optical radiation pressure. By shining a laser beam on a reflective surface and then measuring how much the surface moves in response to light's pressure, researchers can measure the laser's force (and therefore, its power) and use the light that bounces off the surface directly for manufacturing work. Through proper selection of materials, polishing, and coatings, the reflective surface can be tuned for the amount of reflection and wavelengths being measured.

BENEFITS

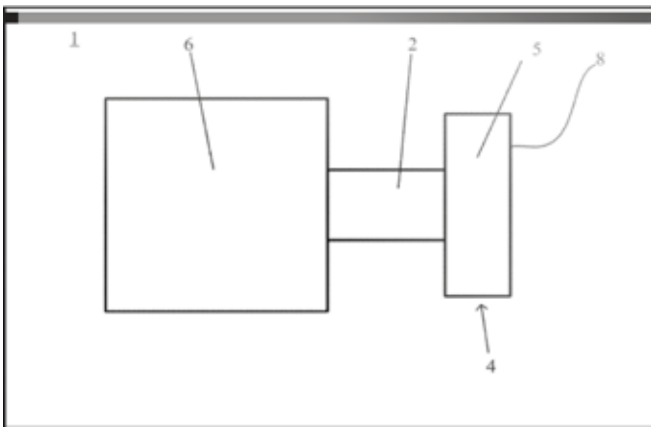
Commercial Application

The optical power is determined in real time while the radiation reflected from the optical meter is available for use.

This technology can be used directly for applications like cutting and welding.

Competitive Advantage

- Fast characterization of optical power
- Optical power determined in real time
- Does not rely on absorption of radiation
- Low cost



Optical meter 1 includes ref ector 4 disposed force member 2. Ref ector 4 is conf gured to receive radiation and to communicate a pressure of the radiation to force member 2. Ref ector 4 includes substrate 5 and ref ective surface 8. Force member 2 is conf gured to be displaced in response to receiving the force comprising the pressure, and optical meter 1 is conf gured to measure a power of the radiation, an energy of the radiation, or a combination thereof based on the pressure.

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NIST TECHNOLOGY PARTNERSHIPS OFFICE

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