

Title (en)

Method and apparatus for monitoring the temperature and velocity of plasma sprayed particles.

Title (de)

Verfahren und Vorrichtung zur Überwachung der Temperatur und Geschwindigkeit von gespritzten Plasmateilchen.

Title (fr)

Méthode et appareillage pour surveiller la température et la vitesse des particules au cours de la pulvérisation au plasma.

Publication

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Application

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Abstract (en)

A method and an apparatus for monitoring simultaneously the temperature and the velocity of sprayed particles. The system is comprised of a sensor head attached to the spray gun, an optical fibre transmitting the collected radiation to detection apparatus, and a protective detection cabinet having the detection apparatus that incorporates two detectors. A two-slit or multiple-slit mask is located in the sensor head at the end of the optical fibre. For the temperature measurements, the particle emitted radiation collected by the sensor head is transmitted to two photodetectors, filtered by interference filters at two adjacent wavelengths. The particle temperature may be computed from the ratio of the detector outputs. To measure the velocity, the two-slit system collects radiation emitted by the in-flight particles travelling in the sensor field of view, which generates a double peak light pulse transmitted through the optical fibre. The time delay between these two peaks may be evaluated automatically and the particle velocity computed knowing the distance between the two slit images. <IMAGE>

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Citation (search report)

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