

Title (en)

TEMPERATURE DEPENDENCE OF LASER EMISSION FROM SCATTERING MEDIA CONTAINING LASER DYE

Title (de)

TEMPERATURABHÄNGIGKEIT DER LASEREMISSION EINES EIN STREUMEDIUM ENHALTENDEN LASERFARBSTOFFS

Title (fr)

DEPENDANCE THERMIQUE D'UNE EMISSION LASER PROVENANT D'UN MILIEU DIFFUSEUR CONTENANT UN COLORANT A LASER

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Application

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Abstract (en)

[origin: WO0038283A1] A method and system provides for remotely sensing an environmental condition of an object (10). The method includes the steps of: providing the object (10) with an amplifying scattering medium (12), such as a dye and randomly distributed nanoparticles scatters, that exhibits a dependence of laser emission on at least one environmental condition; scattering medium with a pump laser beam (14A) for inducing a laser-like emission (14B) from the amplifying scattering medium; detecting a wavelength of an emission peak of the laser-like emission; and correlating the detected wavelength with a value of the environmental condition. The environmental condition may be temperature, and it is shown that there is a linear dependence in the 77K-380K range, with a slope of about 0.09 nm/K.

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