Title (en)

OPTICAL STRUCTURE FOR MULTI-PHOTON EXCITATION AND THE USE THEREOF

Title (de)

OPTISCHE STRUKTUR ZUR MULTI-PHOTONEN-ANREGUNG UND DEREN VERWENDUNG

Title (fr)

STRUCTURE OPTIQUE D'EXCITATION MULTIPHOTON ET SON UTILISATION

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Application

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Abstract (en)

[origin: WO02079765A2] The invention relates to a variable embodiment of an optical structure, comprising an optical waveguide with a wave-guiding layer (a) that is transparent at at least one excitation wavelength. Said optical structure is characterised in that the intensity of excitation light that is input into the layer (a) and guided through said layer (a) is sufficiently high on and in said layer (a) to excite molecules capable of luminescence and/or photoreactive molecules located on the surface of the layer (a) or at a distance of less than 200 nm from the latter (a), by means of multi-photon excitation, preferably two-photon excitation. Preferred embodiments are those which allow a linear or planar multi-photon excitation along the excitation light that is guided through the layer (a). The invention also relates to various embodiments of optical systems and analytical systems comprising an excitation light source and an inventive embodiment of an optical structure and to methods based thereon, in particular to luminescence excitation and to the luminescent detection of one or several analytes by means of multi-photon excitation, in addition to the use of said embodiments and methods.

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