

Title (en)

ARRANGEMENT AND METHOD FOR THE OPTICAL DETECTION OF CHEMICAL AND BIOCHEMICAL MOLECULES AND/OR PARTICLES CONTAINED IN SAMPLES

Title (de)

ANORDNUNG UND VERFAHREN ZUR OPTISCHEN DETEKTION VON IN PROBEN ENTHALTENEN CHEMISCHEN, BIOCHEMISCHEN MOLEKULEN UND/ODER PARTIKELN

Title (fr)

AGENCEMENT ET PROCÉDÉ POUR LA DÉTECTION OPTIQUE DE MOLECULES ET/OU DE PARTICULES CHIMIQUES, BIOCHIMIQUES CONTENUES DANS DES ÉCHANTILLONS

Publication

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Application

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Abstract (en)

[origin: WO2004106901A1] The invention relates to an arrangement and a method for the optical detection of chemical and biochemical molecules and/or particles contained in samples, using surface plasmon resonance (SPR) which varies according to the optical refractive index. According to the invention, light from a light source is directed towards an optical detector by means of at least one sensor element which is embodied as an optical waveguide, at least in sections. At least one electroconductive thin layer is provided on the boundary surface of said optical waveguide, beneath a measuring surface. The light guided by the optical waveguide strikes the boundary surface in the region of the thin layer, at angles above the total reflection angle. A front side of the sensor element is provided with an aspherical, convex, optical surface for the light incidence, by which means the light inside the sensor element is focussed in the direction of the boundary surface covered by the at least one thin layer and/or measuring surface, and a second aspherical, convex, optical surface is provided on the front side of the sensor element for the light emergence. The light modified as a result of surface plasmon resonance is directed in a collimated form towards the at least one optical detector by means of said optical surfaces.

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