

Title (en)
DEVICE AND METHOD FOR COHERENT MULTI-DIMENSIONAL OPTICAL SPECTROSCOPY

Title (de)
VORRICHTUNG UND VERFAHREN ZUR KOHÄRENTEN MEHR-DIMENSIONALEN OPTISCHEN SPEKTROSKOPIE

Title (fr)
DISPOSITIF ET PROCÉDÉ DE SPECTROSCOPIE OPTIQUE COHÉRENTE MULTIDIMENSIONNELLE

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Abstract (en)
[origin: WO2009143957A1] The invention relates to a device (10) and a method for coherent, multi-dimensional optical spectroscopy, having means (14, 16) for splitting a base light pulse (12) into at least one first to fourth light pulse, wherein the first, second and third light pulses are suitable for interaction with a sample (40) for generating a signal of at least the third order, a focusing device (36) for focusing the first through fourth light pulses onto the site of a sample, and delay means (18, 28) that are suited to vary the arrival times of the first through fourth light pulses at the site of the sample relative to each other. The device (10) further comprises a detection unit for detecting an interference signal from the signal of at least the third order and the fourth pulse. The means for splitting the base light pulse (12) are made of non-diffractive means (14, 26). The light pulses are guided, at least in sections, in pairs such that changes in the optical path length caused by a vibration of the means (14, 26) for splitting the base light pulse (12) or a planned variation with the aid of the delay means (18, 28) are identical in the pulses of a pair of at least the first order, the pulse pairs being selected such that the effects of the change in the arrival times of the pulses of a pair resulting from the changes in the optical path length on the phase of the interference signals at least partially offset each other.

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