

Title (en)  
HIGH-RESOLUTION 3D FLUORESCENCE MICROSCOPY

Title (de)  
HOCHAUFLÖSENDE 3D-FLUORESZENZMIKROSKOPIE

Title (fr)  
MICROSCOPIE DE FLUORESCENCE 3D HAUTE RÉOLUTION

Publication  
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Application  
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Abstract (en)  
[origin: WO2015022146A1] The invention relates to a method of microscopy for generating a high-resolution image (/f) of a sample (2) comprising the following steps: a) providing the sample (2) with a substance which emits specific statistically blinking fluorescent radiation after excitation, or using a sample (2) which contains such a substance, b) directing illuminating radiation (10) onto the sample (2) and thereby exciting the sample (2) for emission of the fluorescent radiation, c) repeating imaging of the sample (2) which emits the fluorescent radiation along an optical axis (OA) onto a spatially resolving detector (5), such that a sequence of images (In) is obtained, d) processing the sequence of images (In) by means of a cumulant function, which evaluates intensity fluctuations in the sequence of images (In) caused by the blinking, and thereby generating an image (If) of a local distribution of the substance in the sample (2) which has a spatial resolution increased beyond the optical resolution of the image, wherein e) directing of the illuminating radiation (10) takes place such that the illuminating radiation (10) excites the sample (2) along the optical axis (OA) only in a limited depth region for emission of the fluorescent radiation.

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