



ISTITUTO ITALIANO
DI TECNOLOGIA

TITLE

Stimulated emission depletion microscopy (STED), with temporal gating of the excitement beam and synchronous detection of the fluorescence emission

INVENTORS

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DESCRIPTION

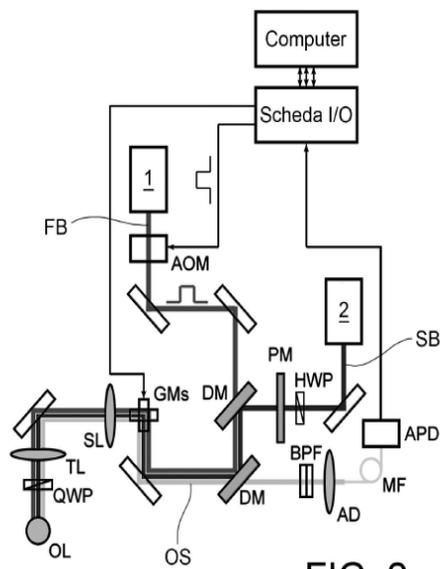
The invention relates to a method of optical microscopy by scanning a sample containing an excitable species, the method comprising:

- Directing a first and a second light beam on the respective partially overlapping areas of the sample, wherein the first light beam is expected to excite elements of the excitable species, and the second light beam is expected to reduce the number of excited elements;

- Detect an optical signal coming from the sample, comprising a main component and a spurious component, during a first and a second consecutively time windows, the first time window in order to detect the optical signal for an interval during which the main component and the spurious component are both present, and the second time window for detecting the optical signal for an interval during which the main component tends or is equal to zero;

- Process the optical signal detected by separating the main component.

The first beam is active during the first time slot and is interrupted during the second time window.



APPLICATIONS

STED microscopy, optical microscopy

KEYWORDS

Microscopy, spatial resolution, excitable species, STED

BIBLIOGRAPHIC DATA

Microscopia A Deplezione Mediante Emissione Stimolata (STED), Con Gating Temporale Del Fascio Di Eccitazione E Rilevamento Sincrono Dell'emissione Di Fluorescenza

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