

Title (en)

SYSTEMS AND METHODS FOR PROVIDING INFORMATION CONCERNING CHROMOPHORES IN PHYSIOLOGICAL MEDIA

Title (de)

SYSTEME UND VERFAHREN ZUR BEREITSTELLUNG VON INFORMATIONEN DIE CHROMOPHOREN IN PHYSIOLOGISCHEN MEDIEN BETREFFEN

Title (fr)

SYSTEMES ET PROCEDES PERMETTANT D'OBTENIR DES INFORMATIONS CONCERNANT DES CHROMOPHORES PRESENTS DANS DES MILIEUX PHYSIOLOGIQUES

Publication

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Application

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- US 22281600 P 20000804
- US 22307400 P 20000804
- US 66497200 A 20000918
- US 77861401 A 20010206
- US 77861801 A 20010206
- US 77861701 A 20010206
- US 77861301 A 20010206
- US 87751501 A 20010607

Abstract (en)

[origin: WO0212854A2] The present invention generally relates to systems and methods for providing information about chromophores in physiological media. More particularly, the invention relates to non-invasive systems and methods for determining absolute values of oxygenated and/or deoxygenated hemoglobins and their ratios in a physiological medium. The system in a preferred embodiment generally includes a portable probe having a source module for irradiating into the medium electromagnetic radiation, a detector module detecting radiation from a target area in the medium, and a processing module determining the absolute values of the chromophore concentrations and their ratios thereof based on input and output parameters of the source and detector modules. In one aspect, the invention provides a solution for the unknown parameters of the chromophores in a medium using a novel processing algorithm. In another aspect, the invention concerns a portable unit for performing the requisite measurements, which unit includes a movable member having one or more radiation sources and one or more radiation detectors, and an actuator designed to cause the member to move along predetermined curvilinear paths. Properties of the chromophores are measured for individual voxels defined along each motion path, and/or cross-voxels defined at the intersection of voxels along different motion paths. These measured values are then used in a preferred embodiment to generate two- or three-dimensional images of the distribution of chromophores or their properties. In other aspects, the invention includes various patterns for the optimal distribution of sources and detectors for the optical probe, and self-calibrating operation of the probe substantially in real-time.

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Citation (search report)

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- See references of WO 0212854A2

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