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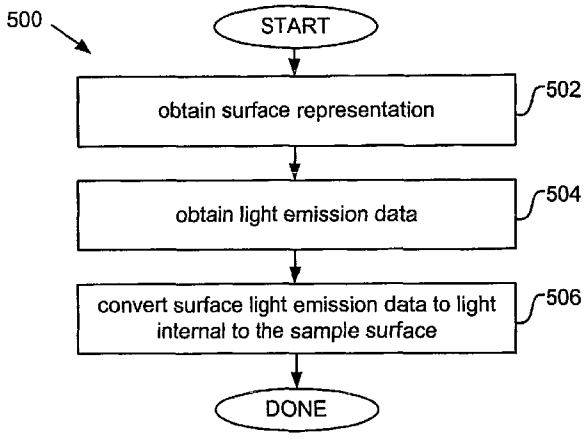
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(54) Title: METHOD AND APPARATUS FOR 3-D IMAGING OF INTERNAL LIGHT SOURCES



(57) Abstract: The present invention provides systems and methods for obtaining a three-dimensional (3D) representation of one or more light sources inside a sample, such as a mammal. Mammalian tissue is a turbid medium, meaning that photons are both absorbed and scattered as they propagate through tissue. In the case where scattering is large compared with absorption, such as red to near-infrared light passing through tissue, the transport of light within the sample is described by diffusion theory. Using imaging data and computer-implemented photon diffusion models, embodiments of the present invention produce a 3D representation of the light sources inside a sample, such as a 3D location, size, and brightness of such light sources.

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