

Holographic simulation of the effect of laser biostimulation and the methods of manufacturing phantom test objects for radiology

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Abstract

It is proposed to use self-developing colloidal holographic recording emulsions to study the structure of a coherent electromagnetic field. The gel of such emulsions can be formed into various geometric shapes with an adjustable refractive index. Sensitization of the emulsion to red radiation allows to simulate the effect of laser radiation on biological objects, including the infrared range. The similarity of the properties of gelatinous gel to human tissues allows to use it to simulate various objects in radiological procedures in oncology. The paper considers optical schemes for the synthesis of phantom test objects in X-ray therapy.

Keywords: holographic simulation, laser biostimulation, test object, radiology, colloidal holographic recording, coherent electromagnetic field, sensitization emulsion, infrared range, X-ray.

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