

01. Defining holography and hologram

In an effort to briefly describe what holograph and holograms are, a variety of definitions and approaches have been shaped. According to dictionary, the term holography refers to the branch of optics as well as the process and/or the technique that deals with the use of coherent light from a laser in order to create a hologram, meaning a pattern produced on a photosensitive medium, able to recreate a three-dimensional image of the object [1] [2]. Emphasize in key points of the holographic procedure, the HIH (Hellenic institute of Holography) defines holography as a recording technique of the waves of light emitted by an object [3]. The result of this procedure is called hologram. When the surface of an hologram is properly lighted, it is able to reproduce a three-dimensional replica of the object. Researchers of another institute working on holography, the Holocenter, define the hologram as a physical structure that diffracts light into an image [5], while the founder of Holographic studio in New York, Jason Sapan, describes the hologram as a photograph of the shape that light takes when it's impressed by an object, as well as a sculptural, casting of the light waves, in a special piece of film [6]. Thus, as it is argued, the term 'hologram' can refer to both the encoded material and the resulting image. In Britannica encyclopedia, photography terminology is utilized to describe holography. Therefore, holography is explicated as the creation of a unique photographic image without the use of a lens [4]. The outcome, which is mentioned as a photographic recording of the image, is called hologram. However, it is clarified that the procedure of recording a hologram is totally different.

It is obvious that holography is a rather sophisticated technique and thus an elaborate description of the entire process is necessary in order to fully comprehend its nature.



Figure 1 Hologram of a shell (left, retrieved from [3]), Rainbow hologram (right, retrieved from [5])

References – Resources

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HOLOMAKERS PROJECT

Motivating secondary school students towards STEM careers through hologram making and innovative virtual image processing practices with direct links to current research and laboratory practices

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Declaration

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