

ABSTRACT

Recent improvements in key foundation technologies have transformed the field of Display Holography. Full-colour analogue holograms may now be created with substantially better image characteristics than previously possible, leading to new types of displays and new applications. In particular new recording systems, based on DPSS and semiconductor lasers combined with novel panchromatic ultra-fine-grain silver-halide recording materials have demonstrated full-colour analogue holograms of both lower noise and higher spectral accuracy. Three (RGB) laser wavelengths are a minimum, but four or five are required for better colour rendering.

The analogue single-beam colour reflection hologram of the Denisyuk type (now referred to as an OPTOCLONETM) is described with recent applications. Progress in illumination technology, employing the new RGB-LED lights, is leading to a further major reduction in display noise and to a significant increase of the clear image depth and brightness of such holograms. Analogue colour holograms of the Denisyuk type are the ones which really create the illusion of viewing a real object behind the plate rather than an image of it. In particular, recording museum artefacts using mobile holographic equipment is described. For the mobile recording system developed by HiH in Greece, COBOLT lasers were selected because of their reliability, long coherence length and stable output. In particular the recording of the famous Fabergé Easter Eggs in St Petersburg, Russia, will be described in this presentation.