

## COLOR "ULTIMATE" HOLOGRAPHY

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The fundamental opportunity to record color volume image and to reconstruct it in white light has been laid in Yu. N. Denisyuk method but the high quality color holograms are uncommon up to nowadays. The most important technological problems to be solved are elaboration of light sensitive material for color holography and development of chemical processing. The goal of the work was creation and development of high sensitive panchromatic photographic material for color holography and usage it for recording ultimate color Denisyuk holograms, color transmission masters (H1), color copies (H2), color Lippmann photographs, color holography prints. Such material has been built up and named «Ultimate». Now it has three modifications: «Ultimate 08», «Ultimate 15» и «Ultimate 25» in accordance with an average dimension of silver-halide micro crystals. The material has resolution up to  $10\ 000\ \text{mm}^{-1}$  and is sensitized to the spectra zone which depends on wavelength of record – it is a narrow spectra zone for monochrome hologram or three spectra zones (red, green, blue) for color hologram. The speed of «Ultimate» occupies range  $3\text{-}300\ \mu\text{J}/\text{cm}^2$  depending on crystal size.

The «Ultimate» material allowed to record color Denisyuk holograms (size 30x40 cm), color transmission masters and their color copies (16x21 cm), color holography prints (60x80 cm). The set of laser wavelengths used for record of color holograms is located in range 440-660 nm. The features of color «Ultimate» holograms are high brightness in all visible spectra, low level of noise and absence of shrinkage or swelling of emulsion layer providing right color reproduction of 3D image at reconstruction in white light.