

# Solving image flicker problems in using modern artificial light for high-speed shooting in cinematography and television

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## Abstract:

This research is one of that kind of concepts in the scientific way to study one of the problems related to very high-speed Cinematography, which is the problem of its artificial light, as a way to solve its relation.

**Research problem:** The film and Television industry are interested in High-Speed image, in that aspect image has faced defects and different problems, especially when shooting 1000 frames per second rate, problems like that the picture appears flickering and with a quick blink (flicker image) as the image of the hidden scenes automatically appear where you see the image at full intensity light and then suddenly disappear and you see a black area in the image, and the image will return again. For that digital camera manufacturers run into improving a new cameras producing that kind of motion, in the same time the users start as well to use it in every aspect and filed not just that, the cameramen fastly start to study how they will produce a whole concept of regulation and how to design for a starting point till the end a firm system. This research is one of that kind of concepts in the scientific way to study one of the problems related to very high-speed Cinematography, which is the problem of its artificial light, as a way to solve its relation.

**Research aim:** The research aims to study the problems that appear in moving the image of high-speed, And study the factors influencing them to gain access to the process of flicker image problem solutions, By modern industrial lighting sources that are compatible with the digital cinematography and television. The research aims to study the problems that appear animated image of high-speed and study the factors influencing them to gain access to the process to the problem of flicker image solutions (Flicker). By modern industrial lighting sources that are compatible with the cinematography and digital television.

**Methodology:** Researcher will use a descriptive and analytical approach to some elements of the production of high-speed moving image through lighting sources, cameras, which are produced by this type of imaging, to solve the research problem. **Research Questions:** 1. To what extent have the shutter speed of the camera in high-speed imaging significant impact on the effect of the image strobe? 2. What are the best modern digital cameras that can use in high-speed imaging to at least or this effect almost disappears? 3. To what extent does the electric current frequency of the light sources used in high-speed imaging defect image strobe?

**Research Results:** 1. The use of lighting sources with metal halide lamps (HMI) in high-speed imaging will reduce the impact of the image strobe or hide completely. 2. LED light industry has devolved to become valid for shooting motion with high-speed rates, but produce an image flicker. 3. The using of cold fluorescent lamps lighting sources (Cool Light) Kinoflo with modern high-speed imaging will reduce the impact of the image strobe or hide it completely. 4. Modern light sources designs have ended the defects of strobe image when shooting at high-speed rates. 5. Increase the electrical frequency is the key to controlling the absence of a strobe image for high-speed image. 6. The higher the shutter angle (180-degree angle) the more the strobe image increased in the final image and therefore uses narrow-angle aperture gets rid of image strobe. 7. Digital Cinema and Television cameras become capable of producing images of high-speed imaging at high rates without producing strobe images because of the improvement of sensitive sensors surfaces and also the quality of its high definition. 8. Tungsten lighting sources have no strobe image defect in high speeds imaging shoots.

## Keywords:

Image Flicker, Artificial Light , High-Speed Shooting