

O18. Digital Infrared Photography – Principles and practice

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Infrared photography has been possible since the development of silver halide emulsions with extended sensitivity in the early 1900s. Forensic Science has always used infrared techniques but now with digital infrared cameras techniques that required an expert photographer, with technical as well as darkroom skills, can become part of every day practice.

Digital cameras all contain light sensitive chips that can see not only visible light but into the infrared and ultraviolet regions of the spectrum. Indeed, manufacturers have to include filters to deliberately limit cameras to the visible spectrum. So either by buying a specialized IR/UV camera or converting a standard camera and using a range of filters we can record both control images (Visible spectrum), infrared and ultraviolet.

This paper looks at the cameras, lenses, lighting and filter combinations needed for infrared photography and its practical application in photographing the skin. This has forensic and medical applications; here we will be looking at recent work on the photography of cover-up tattoos to see whether the underlying tattoos can be recorded using infrared light. This is examining not only; tattoos, tattoos pigments, styles and depth, but also the optical characteristics of human skin.

As the techniques are not dependent on black and white development processes we can bring this technique into regular use in the classroom for Forensic Photography modules, Independent Studies or further research at Masters or PhD level as well as for use in law enforcement.