



Article Title: *Comparison of Fingerprint Detection Using Semiconductor Laser And LED Light Sources with Three Chemical Reagents*

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Article's Subject Matter: A study to explore the optimum light and filter combinations of laser and light – emitting diode (LED) light for use with indanedione and two new chemical reagents, genipin and lawsone.

Key Points in Article

- Genipin, an extract of the gardenia fruit, reacts with amino acids. Effective on brown wrapping paper according to Israeli researchers.
- Lawsone, an extract of henna, reacts with amino acids. Visualizes latent fingerprints as brown coloured impressions.
- 1,2-indanedione is accepted as the most sensitive amino acid reagent for paper surfaces.
- Latent marks were collected from twenty subjects on bond paper and brown paper.
- Light sources used: TracER laser (460,532, 577 nm)
Polilight Flare Plus 505 LED
- Results indicated that treatment with indanedione/zinc chloride was most effective at excitation of fingerprints.
- "With the exception of 577nm laser and genipin, the two new reagents, genipin and lawsone, did not provide useful results under test conditions".
- The laser light source proved to be more sensitive at detecting untreated impressions.
- Ridge clarity was frequently higher with laser light source versus the LED light source.

Fallacies and or Issues

- "Monochromatic sources (lasers) and broad band sources (filtered lamps, LEDs) each have the potential to detect evidence missed by the other".
- "Broad band sources present greater versatility than lasers, in offering different emission ranges across the spectrum. This allows for the matching of emission to the specific target, be it body fluids or detection by chemistry".

