tech briefs

Westinghouse Savannah River Company

Fingerprint detection and analysis made easy

BritePrint™ Device

at a glance

- Enables advanced real-time field detection and analysis
- LED technology for brighter illumination
- Cost effective
- Self-powered and easily portable
- Hands-free operation
- U.S. patent pending

for more information

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Researchers at the Westinghouse Savannah River Company (WSRC) have developed a small, lightweight, battery-powered, high intensity light source for on-site fingerprint detection and analysis. Comprising a light source, a power source, and a personal attachment device, the BritePrint system offers hands-free operation during the investigative process. This advanced technology, when used in conjunction with traditional dust detection methods, reveals otherwise invisible fingerprints, footprints, and other latent markings at crime scenes and can save valuable time in the investigation process.

Background

When timeliness in apprehending a criminal suspect is critical, the crucial detection of fingerprints, footprints, or other markings at a crime scene can be a slow, delaying process. The current method of detecting prints is to "dust" the crime scene. The dusted area is then illuminated by a light source such as a Xenon filament lamp. An officer then carefully uses tape to lift each illuminated print for transport to a laboratory. Current light sources are expensive and cumbersome and must be plugged into AC wall outlets. They are also heavy and must be hand held by one officer while another officer lifts the prints.

The portable BritePrint system can be easily operated by one person and provides the first battery-powered illumination source with sufficient blue light intensity to compete with the existing fingerprint technologies at a fraction of the cost. The lightweight, hands-free light source can illuminate hard-to-reach places not readily reached by traditional light sources. It also can be used to detect latent prints in any remote or outdoor environment with or without the benefit of sunlight or other sources of lighting.

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BritePrint™ Device

How it works

Using an array of light emitting diodes (LEDs), the BritePrint device emits wavelength-specific light of sufficient intensity to cause areas brushed with a dye to visibly flouresce. Wearing light-filtering goggles to make the markings easily detectable to the human eye (orange goggles in the case where rhodamine 6G dye is used), an analyst can quickly proceed with the on-site identification and analysis of the markings. Use of video cameras with specially colored lenses or other optical scanning devices provides additional possibilities for recording critical crime scene evidence.

Easy, long lasting, low cost

It is anticipated that most users will prefer to attach the LED array to a lightweight head set. It also can be attached elsewhere by using devices such as front or back packs, pockets, or belt pouches. The same is true for the power source, a 6-volt battery or 4 D-cell battery pack, which may be worn on any part of the body as preferred by the user.

The high efficient, cost effective light source can operate for up to 1000 hours. A small incorporated fan maintains the LEDs at ambient temperature during prolonged use.

The low cost of the BritePrint system will make this device available to many law enforcements and private investigation agencies that cannot afford today's technology.

Partnering opportunity

A U.S. patent application has been filed for this invention. WSRC plans to file a Patent Cooperation Treaty application for international patent protection.

WSRC invites interested companies with proven capabilities in this area of expertise to enter into a licensing agreement with WSRC to manufacture and market this device as a commercial product. Interested companies will be requested to submit a business plan setting forth company qualifications, strategies, activities, and milestones for commercializing this invention. Qualifications should include past experience at bringing similar products to market, product design and development capabilities, reasonable schedule for product launch, sufficient manufacturing capacity, established distribution networks, and evidence of sufficient financial resources for product development and launch.

Technology transfer

WSRC is the managing contractor of the Savannah River Site for the U.S. Department of Energy. WSRC scientists and engineers develop technologies designed to improve environmental quality, support international nonproliferation, dispose of legacy wastes, and provide clean energy sources.

WSRC is responsible for transferring technologies to the private sector so that these technologies may have the collateral benefit of enhancing U.S. economic competitiveness.

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