

BacRam

Spectrometry-based bacterial detection

BacRam is a compact, portable system that can quickly identify pathogenic bacteria. It was developed under the CEA's Global Security Research Program and leverages the CEA's know-how in instrumentation, biology, signal analysis, algorithm development, and biological testing design and validation.

The system combines Raman spectrometry, a non-destructive method for identifying bacteria by their molecular signature, and lensless imaging, a technique to detect the presence of bacteria in a sample without a microscope, in a unique way. The result is a miniature, portable system that delivers the same level of effectiveness as traditional detection systems.

BacRam also makes bacterial detection more efficient, eliminating the need to grow cell cultures (to obtain sufficient biological material). The system's classification algorithms can identify bacteria in just fifteen minutes, including the time it takes to prepare the sample.

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