

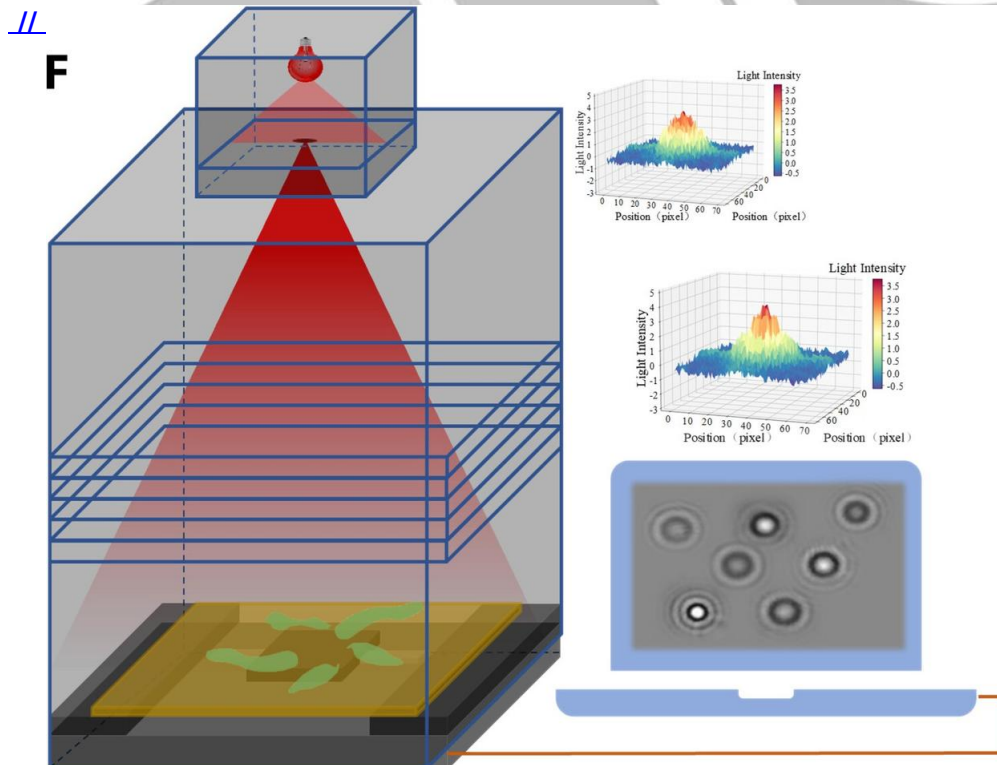


Diffraction-Based Tool to Detect Virus

Source: TH

Researchers have **developed a method** to identify infected cells by observing **how they distort light**.

- They tracked these distortions over time to mimic a **progressing infection** and compared them to healthy cells, identifying a **unique 'fingerprint' for virus-infected cells**.
- Researchers infected pig testicle cells with **the pseudorabies virus**, shone light through them, and **observed distinct diffraction patterns** based on **contrast and texture**.
 - **Diffraction** refers to **light waves spreading out** after passing through narrow openings or around objects, **creating patterns of light and dark stripes**.
- The light-based technique **detects infections in about two hours**, costing a **tenth** of the required for **traditional 40-hour chemical reagent methods**, and avoids reagent-related delays and supply chain issues.
- The **low cost and ease of use of the light-based detection method** make it ideal for the early identification of viral infections in **livestock and pets**, aiding in breeding, preventing economic losses during outbreaks, and **supporting the World Health Organization's (WHO) rapid response recommendations**, especially in **resource-limited countries**.
- Earlier, scientists have developed a highly accurate **holographic imaging method using laser beams to detect viruses** and antibodies within 30 minutes, utilizing **xSight, an instrument by Spheryx**.



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