

Biological identification systems are a vital component in countering the threats to life and health from natural and engineered pathogens, toxins and bioterrorism agents. It is essential that such identification systems are fast, accurate, reliable and easy to use. It is also important to employ the most suitable technology in dealing with any particular threat. *Biological Identification* provides a detailed review of the technologies available and the potential for future developments.

Part I covers the essentials of DNA and RNA sequencing for the identification of pathogens, including next-generation sequencing (NGS), polymerase chain reaction (PCR) methods, isothermal amplification and bead array technologies. Part II addresses a variety of approaches to making identification systems portable, tackling the special requirements of smaller, mobile systems in terms of fluid movement, power usage, and sample preparation. Part III focuses on a range of optical systems and their advantages. Finally, Part IV describes a unique approach to sample preparation and a promising approach to identification using mass spectroscopy.

Biological Identification will be a useful resource for academics and engineers involved in the microelectronics and sensors industry, and for companies, medical organizations and military bodies looking for bioterrorism solutions.

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