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Advances in decontamination technology as a solution for improved food safety

There remains significant global illnesses and death from pathogens entering the food chain. To this end, best practice can reduce the likelihood of infection but active measures are constantly being developed. Uptake of novel ideas by industry is often slow. This may be due to a number of reasons e.g. cost or the perceived risk of these technologies being less efficient than conventional practice. A review is given on the scale of the current problems, both financially and in terms of the unnecessary deaths that occur per year and why uptake is slow. Potential solutions to solve these problems are discussed, with emphasis placed on developing improved protocols and establishing methods on how industry can uptake improved technological solutions. Advanced protocols can help establish improved practice. Detection can play a vital role in identifying contamination; consequently, the role of real time detection systems in reducing infection will be evaluated along with their role in improving advanced decontamination system performance.

Biography

Ian A Watson has done his First degree in Applied Physics, followed by a PhD from the School of Engineering, University of Glasgow, in "Optimizing the gaseous discharge and optical coupling of a pulsed CO_2 laser". He has extensively researched on the effects of high power laser beams on microorganisms and laser sterilization and inactivation; has published on direct effects of lasers and their efficacy on decontaminating different substrates (solids, liquids and air) and a range of microorganisms (*E. coli* to *B. atrophaeus*, an anthrax simulant). He has investigated the real time detection techniques of bacteria and microalgae for improved biofuel production. He is a Reader in *Applied Energy*.

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