

High intensity ultrasounds (HIUS)

Principles

High-intensity ultrasound (HIUS) refers to ultrasound operating at high frequency (ranging from 20 to 100 kHz) and power (between 100 and 500 W/cm²). HIUS is generally considered safe, nontoxic, and environmentally friendly. Over the last decade, HIUS processing has attracted increasing interest in the field of food disinfection.

Benefits



Safe



Nontoxic



Environmentally friendly



Minimizing of flavor loss



Greater homogeneity



Significant energy savings



Challenges

- Limited antimicrobial effect
- Needs to be combined with chemical sanitizers to enhance disinfection efficacy.
- Information on the commercial application of ultrasound is scarce.
- The small radiation area of transducers is a vital shortcoming for industrial applications.
- Efforts are needed to develop robust large-scale equipment