

PERSPECTIVE DIRECTIONS OF CONSTRUCTIVE IMPROVEMENT OF EQUIPMENT FOR HYDRODYNAMIC PROCESSING OF MATERIALS

Equipment for hydrodynamic processing of materials processing has been widely applied in multiple fields, including chemicals, pharmaceuticals, food, and environmental protection. The material processing often involves complex interactions between fluids and solids, or liquids and gases.

Traditional processing methods frequently suffer from low efficiency, high energy consumption, and operational complexity. Therefore, developing efficient and precise fluid dynamics processing equipment has become a key approach to improving production efficiency, reducing energy consumption, and enhancing product quality. Particularly in applications such as emulsification, dispersion, and homogenization, conventional equipment often faces the following issues:

Uneven Processing: Traditional equipment struggles to achieve efficient and uniform mixing, leading to unstable product quality.

High Energy Consumption: Many existing devices require high energy input, increasing production costs.

Complex Operations: Existing equipment is difficult to operate and maintain, requiring skilled technicians, which increases the production burden for enterprises.

To address these issues, the development of modern fluid dynamics processing equipment is gradually focusing on optimizing equipment structure, improving process flow, and adjusting fluid dynamics parameters to enhance processing efficiency and product quality.

In recent years, many new devices, such as high-pressure homogenizers, ultrasonic emulsifiers, and jet mixers, have emerged, offering higher processing efficiency, lower energy consumption, and more stable performance, which has driven the rapid development of fluid dynamics processing technology.

ЛИТЕРАТУРА

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