

SCIENTZ ULTRASONIC HOMOGENIZER

Pioneer in Ultrasound Technology Application



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NINGBO SCIENTZ BIOTECHNOLOGY CO., LTD.

SCIENTZ

Manufacturer of Life Science Instruments since 1989
Listed Company (Stock Code: 920685)



• **20,000+** Articles Using Our Instruments by Global Scientists

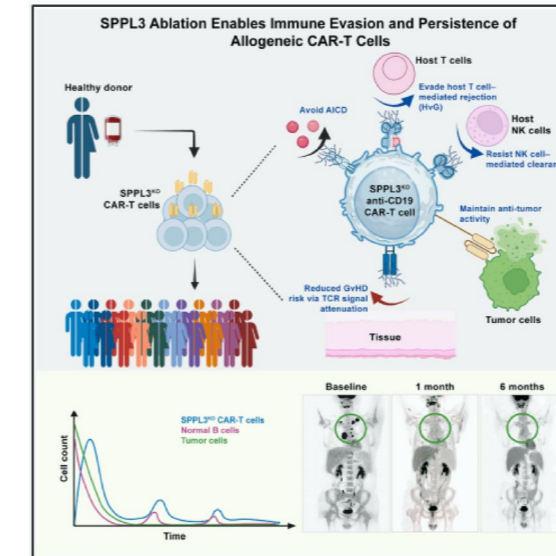
<p>History</p> <p>36 Years since 1989</p>	<p>Clients</p> <p>30,000+ Universities and companies</p>	<p>Articles</p> <p>20,000+ Peer-Reviewed Articles</p>
<p>Installed</p> <p>100,000+ Units globally</p>	<p>Product</p> <p>8 Product Line</p>	<p>Articles</p> <p>100+ In Nature/Science/Cell</p>



Cell

Glycan shielding enables TCR-sufficient allogeneic CAR-T therapy

Graphical abstract



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In brief

SPPL3 deletion modifies glycosylation on primary T cells, reducing allogeneic immune responses without impairing tumor control by anti-CD19 allogeneic CAR-T cells. SPPL3-null, TCR-sufficient anti-CD19 allogeneic CAR-T therapy is safe in three patients with lymphoma or leukemia.

Articles in Nature/Science/Cell

1. Kang, Xing, et al. "Extrachromosomal DNA replication and maintenance couple with DNA damage pathway in tumors." *Cell* 188.13 (2025): 3405-3421.
2. Wu, Zeguang, et al. "Glycan shielding enables TCR-sufficient allogeneic CAR-T therapy." *Cell* 188.22 (2025): 6317-6334.
3. Huang, Peiwu, et al. "Clinical functional proteomics of intercellular signalling in pancreatic cancer." *Nature* 637.8046 (2025): 726-735.
4. Chen, Hengxing, et al. "NBS1 lactylation is required for efficient DNA repair and chemotherapy resistance." *Nature* 631.8021 (2024): 663-669.
5. Liu, Qian, et al. "Proteogenomic characterization of small cell lung cancer identifies biological insights and subtype-specific therapeutic strategies." *Cell* 1871 (2024) - 184-203
6. Chai, Oiyao, et al. "A bacterial phospholipid phosphatase inhibits host pyroptosis by hijacking ubiquitin." *Science* 378.6616 (2022): caba0132.



SCIENTZ

Ultrasonic Homogenizer

Description

These instruments use the cavitation effect of ultrasonic waves to process experimental samples, and can be used to break many kinds of cells, viruses, animal and plant tissues, and can be used for emulsifying, separating, homogenizing, extracting, defoaming, cleaning, preparation of nanomaterials, dispersing, and accelerating chemical reactions, etc.

Application



Bioengineering

Fragmentation of cells, bacteria, viruses, spores and other cellular structures.
Preparation of DNA fragmentation in high-throughput sequencing and chromatin immunoprecipitation.
Extraction of protein membranes (non-contact pulverization).



Pharmaceutical R&D

Dispersion of pharmaceutical substances for injection.
Dispersion and extraction of Chinese herbs.



Food Engineering

Ultrasonic homogenization of drinks.
Mellowing and aging technology for wine.
Accelerated dissolution, accelerated chemical reactions, e.g. in the processing of fats and oils.



Environmental Project

Homogenized soil, rock samples.
Study of the structural and physical characteristics of rocks.



Cosmetic Industry

Extracting the essence of the drug and micronizing the particles to achieve the effect of dispersion and emulsification.

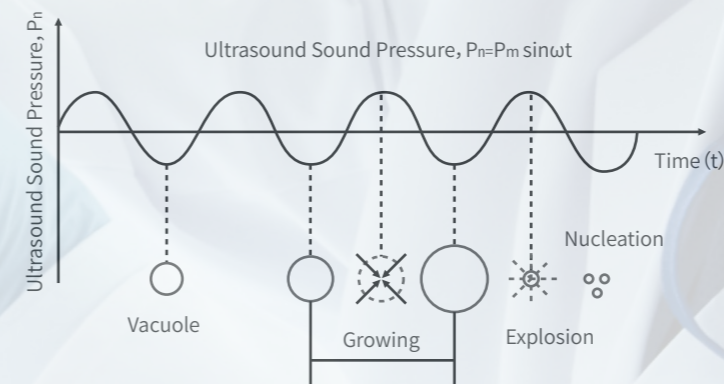


Materials

Treatment of Silica Scale.
Ultrasonic industrial descaling.
Ultrasonic pipe decontamination.
Cracking, emulsification, homogenization and crushing of carbon nanotubes, rare earth materials and other particulate matter.

Working Principle

Based on the cavitation effect of ultrasound in liquids, the transducer transfers electrical energy through the amplitude-variable rod in the liquid at the top of the tool head to produce high-intensity shear force the formation of high-frequency alternating water pressure intensity so that the cavity expansion, explosion will be broken cells. in addition, the use of ultrasonic propagation in the liquid to produce violent perturbation effect, so that the particles produce a large acceleration. thus colliding with each other or collision with the wall to achieve the effect of crushing, emulsification and separation.



DIGITAL ULTRASONIC HOMOGENIZER

Description

The digital ultrasonic homogenizer integrates an advanced digital ultrasonic power supply with a high-performance DSP processor. Leveraging digital frequency synthesis technology and a digital phase-locked loop (PLL) composite control system, it delivers high-precision automatic tracking, high integration, and ultra-wide frequency adaptability.

Available in three configurations—Standard, Benchtop, and Pilot-scale—this series is optimized for processing samples of varying volumes, with probe and model selection tailored to specific sample sizes. It features continuous adjustment of both time and power, enabling efficient disruption of a wide range of biological samples including animal tissues, cells, and bacteria. Beyond cell disruption, it supports diverse applications such as emulsification, separation, dispersion, extraction, cleaning, and acceleration of chemical reactions. Widely utilized in life sciences, materials science, and environmental protection fields, it offers reliable performance for both laboratory and industrial-scale workflows.

Features



Digital Power Supply Automatically adapts to the optimal frequency and tracks it in real time, eliminating the need for manual gear adjustment or matching switches.



Multi-Stage Ultrasonic Operation Supports customizable programming of multi-stage ultrasonic sequences, enabling flexible solutions for complex application scenarios.



Flexible Parameter Adjustment Both ultrasonic duration and power can be adjusted continuously, ensuring stable and precise performance.



Intelligent Memory Storage Allows creation and storage of up to 50 user-defined operating programs for quick recall.



High Amplitude Ratio Transducer The transducer offers an ultra-high amplitude ratio of up to 696:96, delivering powerful ultrasonic energy for efficient sample processing.



Wide Processing Range Available in multiple models to meet diverse customer requirements, with a broad processing volume range from 100µl to 1200ml.



Enhanced Safety Features Equipped with over-temperature, time, and fault alarm systems to ensure safe and reliable operation.



Motorized Lift Stage The motorized lift stage allows precise adjustment of the base position via up/down buttons, eliminating tedious manual adjustments.

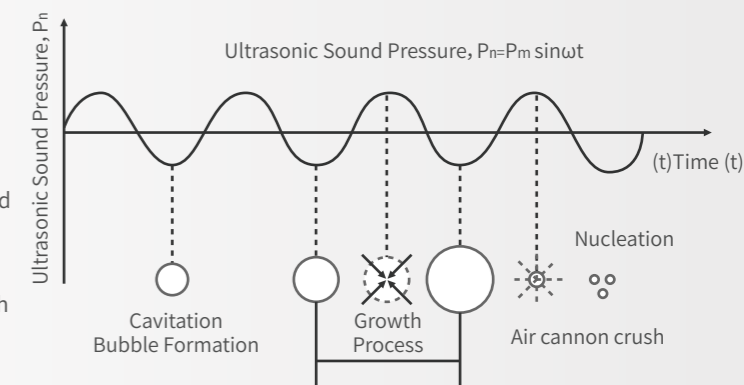


Visualized Operation Features a transparent front door and built-in LED lights for clear visibility of the entire ultrasonic processing process.



Working Principle

Based on the cavitation effect of ultrasonic waves in liquids, the transducer converts electrical energy into high-intensity shear forces in the liquid at the tip of the probe via a horn, creating high-frequency alternating water pressure. This causes cavitation bubbles to expand and implode, disrupting cells effectively. Additionally, the intense agitation generated by ultrasonic wave propagation in liquids imparts high acceleration to particles, leading to collisions between particles and with the vessel wall, achieving efficient cell disruption, emulsification, and separation.



Application Areas



Biotechnology



Food Engineering



Environmental Engineering



Biopharmaceuticals

- Disruption of cells, bacteria, viruses, spores, and other cellular structures; preparation of fragmented DNA for high-throughput sequencing and chromatin immunoprecipitation.
- Homogenization of beverages using ultrasound; wine aging acceleration (aging catalysis technology); acceleration of dissolution and chemical reactions, e.g., in oil and fat processing.
- Homogenization of soil and rock samples; investigation of rock structural and physical characteristics.
- Dispersion of injectable pharmaceutical substances; dispersion and extraction of Chinese herbal medicines; lysis, emulsification, homogenization, and disruption of particulate materials such as carbon nanotubes and rare earth materials.

Technical parameters

Type	JY92-IIN	JY92-IIDN	SCIENTZ-IID	JY98-IIIDN	JY99-IIDN
Operating Frequency	20-25kHz, automatic tracking & adaptive	20-25kHz, automatic tracking & adaptive	20-25kHz, automatic tracking & adaptive	19.5-20.5kHz, automatic tracking & adaptive	19.5-20.5kHz, automatic tracking & adaptive
Sample Processing Volume	100µl-500ml (probe required)	100µl-600ml (probe required)	100µl-600ml (probe required)	50-1000ml (probe required)	50-1200ml (probe required)
Optional Horns	Φ2, Φ3, Φ8, Φ10	Φ2, Φ3, Φ8, Φ10, Φ12, Φ15	Φ2, Φ3, Φ8, Φ10, Φ12, Φ15	Φ10, Φ12, Φ15, Φ25	Φ15, Φ20, Φ28
Optional Beakers	30ml, 100ml, 400ml	30ml, 100ml, 400ml	30ml, 100ml, 400ml	100ml, 400ml	100ml, 400ml
Ultrasonic Power	650W	900W	1000W	1200W	1500W
Output Power	1~100%	1~100%	20~1000W	1~100%	1~100%
Program Storage	50 groups				
Multi-stage Programs	6 stages				
Timer	1~999 minutes adjustable				
Temperature Control	Equipped with temperature sensor, controls sample temperature (0°C-99°C)				
Alarm	Temperature, Time, Fault				
Display	Power, Temperature, Time				
Soundproof Enclosure	Automatic enclosure with motorized lift stage, 1 unit included as standard				
	345*345*535mm Dimensions (WHL)				
Standard Configuration	Generator (main unit)	Generator (main unit)	Generator (main unit)	Generator (main unit)	Generator (main unit)
	Aluminum Alloy Transducer	Aluminum Alloy Transducer	Titanium Alloy Transducer	Titanium Alloy Transducer	Titanium Alloy Transducer
	Φ6mm Probes	Φ6mm Probes	Φ6mm Probes	Φ20mm Probe	Φ25mm Probe

SCIENTZ-F SERIES ULTRASONIC DISPERSER

Product Description

The SCIENTZ-F series ultrasonic disperser utilizes the cavitation effect of liquids to achieve dispersion in liquid-liquid, solid-liquid, and gas-liquid systems. Compared to traditional dispersion methods, it boasts powerful output and superior dispersion effects, making it suitable for dispersing various materials, particularly nanomaterials (such as carbon nanotubes, graphene, and silica). It is widely used in biochemistry, microbiology, food science, pharmaceutical chemistry, and zoology.



Application Areas



Coating Industry

Dispersion of titanium oxide, iron oxide, carbon black, etc., in water or solvents;
Dispersion of fluorescent materials in CRT coatings;
Dispersion of photosensitive materials;
Dispersion of fuels in molten paraffin.



Bio-pharmaceuticals

Dispersion preparation of injectable drugs;
Vaccine preparation.



Cosmetics

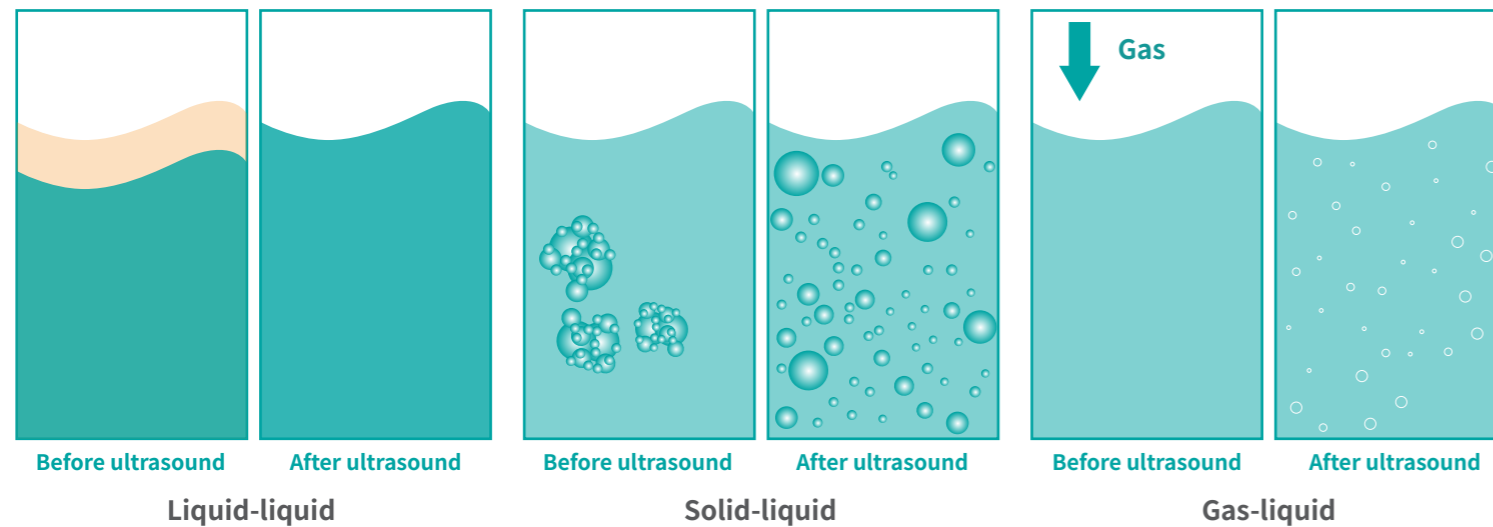
Emulsification of wax, paraffin, etc.; dispersion of micro-particles in detergents, shampoos, and toners;
emulsification of butter for high-quality lactose preparation.



Food Engineering

Dispersion of raw materials in sauce production;
Dispersion of milk powder.

Effect Visualization



Product Features



High Safety Features time, temperature, and overload alarm functions.



Flexible Parameters Ultrasonic time and power are continuously adjustable with good stability.



Good Stability Dispersion particles have uniform size distribution and slow sedimentation rates.



Selectable Modes Includes pulse and continuous operation with testing functionality.



Omnidirectional Emission Unique gourd-shaped dispersing component for both lateral and longitudinal wave emission.

Technical Parameters

Model	SCIENTZ-750F	SCIENTZ-1500F	SCIENTZ-2400F	SCIENTZ-3000F
Ultrasonic Frequency	20.0KHz±0.5 KHz	20.0KHz±0.5 KHz	20.0KHz±0.5 KHz	20.0±0.5 KHz
Display	7-inch touchscreen	7-inch touchscreen	7-inch touchscreen	digital display
Timing Setting	1-999 min	1-999 min	1-999 min	1-999 min or work long hours
Ultrasonic Power	750w(1%-100%)	1500W (1%-100%)	2400W (1%-100%)	3000W (20%-100%)
Included Dispersing Head	10mm	18mm	25mm	38mm
Dispersion Capacity	10-700ml	100-1500 ml	500-2000 ml	1000-5000ml
Duty Ratio	0.1-99.9%	0.1-99.9%	0.1-99.9%	Frequency sweep or no gap operation
Alarm Functions	Timing, temperature, overload	Timing, temperature, overload	Timing, temperature, overload	Timing, overload
Power Supply Dimensions	416*244*300 (mm)	416*244*300 (mm)	416*244*300 (mm)	355*390*142(mm)
Standard Configuration	One main unit, one dispersing head, one soundproof box	One main unit, one dispersing head, one soundproof box	One main unit, one dispersing head, one soundproof box	One main unit, one dispersing head, one soundproof box
Power Supply	AC220V/50Hz	AC220V/50Hz	AC220V/50Hz	AC220V/50Hz

SCIENTZ-TD MULTI-CHANNEL ULTRASONIC HOMOGENIZER

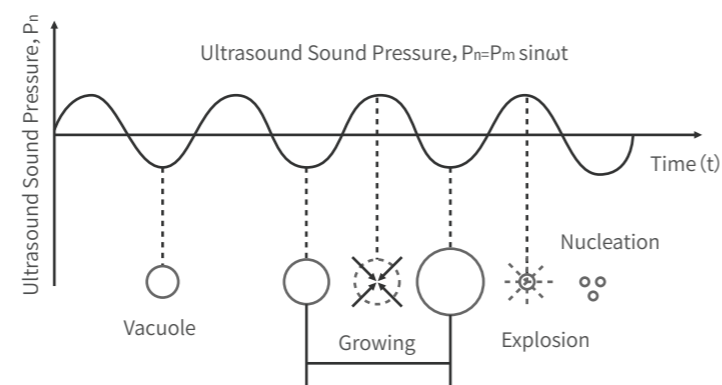
Description

The Scientz-TD series multi-channel ultrasonic homogenizer is developed based on conventional ultrasonic homogenizer, featuring 4/6/16/24/48/96 probes. Users can process multiple samples at once, ensuring speed, high efficiency and good repeatability. This instrument can be used for the disruption of various plant and animal cells, viruses, as well as for emulsification, separation, homogenization, extraction, defoaming, cleaning and accelerating chemical reactions. It is widely applied in fields such as biochemistry, microbiology, pharmaceutical chemistry, surface chemistry, physics, and zoology.

This product is especially suitable for experiments requiring high consistency when processing multiple samples at once.

Working Principle

Based on the cavitation effect of ultrasound in liquids, the transducer generates high-intensity shear forces in the liquid at the tool head via a booster, forming high-frequency alternating water pressure that causes cavities to expand and explode, thereby disrupting cells. The cavitation effect of ultrasound in fluid media creates voids and bubbles within the liquid; when these bursts, they generate powerful pressure peaks. Additionally, shock waves produced by the cavitation effect help achieve the dispersion of polymers.



Features

- Multi-Channel**
Simultaneous processing of multiple samples, rapid, efficient, and strong consistency.
- Flexible Parameters**
Continuous adjustment of ultrasonic time and power with good stability.
- Intelligent Storage**
Ability to create and store up to 20 sets of operation programs.
- High Safety**
Features self-diagnostic functions, automatic error correction, overload, and over-temperature display.
- Selectable Modes**
Option for gap or continuous pulse modes.

Application

- Bioengineering**
Disruption of cells, bacteria, viruses, spores, and other cellular structures; preparation of DNA fragmentation in high-throughput sequencing and chromatin immunoprecipitation (non-contact homogenization).
- Food Engineering**
Ultrasonic homogenization of beverages; aging technology for wine; accelerating dissolution and chemical reactions, such as in fat processing.
- Environment**
Homogenization of soil and rock samples; Study the structural and physical characteristics of rocks
- Biopharmaceuticals**
Dispersion of injectable pharmaceutical substances; dispersion and extraction of traditional Chinese medicine; cracking, emulsification, homogenization, and disruption of nanoparticles, rare earth materials, etc.

Technical Parameters

Model	SCIENTZ-4TD	SCIENTZ-6TD	SCIENTZ-8TD	SCIENTZ-16TD	SCIENTZ-24TD	SCIENTZ-48TD	SCIENTZ-96TD
Ultrasonic Power	2400W	2400W	2400W	2400W	2400W	2400W	2400W
Frequency	20KHz±0.5	20KHz±0.5	20KHz±0.5	20KHz±0.5	20KHz±0.5	20KHz±0.5	20KHz±0.5
Number of Tips	4	6	8	16	24	48	96
Crushing Capacity	1-20ml	1-50ml	1-20ml	1-20ml	100µl-5ml	100µl-4ml	100µl-0.5ml
Power Adjustable	1-100%	1-100%	1-100%	1-100%	1-100%	1-100%	1-100%
Tip Diameter	Φ6	Φ6	Φ6	Φ6	Φ3	Φ3	Φ3
Working Mode	Gap/Continuous	Gap/Continuous	Gap/Continuous	Gap/Continuous	Gap/Continuous	Gap/Continuous	Gap/Continuous
Pulse	Adjustable 0.1-99.9s (gap/working)						
Temperature Sensor	Yes						
Operation Mode	Touch Control						
Display Mode	7-inch TFT						
Display Content	7 types of displays including temperature, power, pulse mode, and time						
Protection Device	Self-diagnostic function, automatic error correction, overload protection, over-temperature protection display						
Storage Data	20groups	20groups	20groups	20groups	20groups	20groups	20groups
Soundproof Box	Yes	Yes	Yes	Yes	Yes	Yes	Yes

SCIENTZ-08 INDUSTRIAL ULTRASONIC HOMOGENIZER

Description

Developed by SCIENTZ based on lab-grade equipment, this industrial disruptor prepares nanomaterials, performs intensive ultrasonic cleaning, and processes cell/tissue samples. Featuring dual-transducer technology, it delivers high power and long continuous operation, making it the ideal ultra-fine disruption solution for industrial production.

Working Principle

Using ultrasonic cavitation, the transducer converts electrical energy into mechanical vibrations, creating intense shear forces in the liquid. This generates high-frequency pressure waves, forming and collapsing bubbles that break cells apart. The shockwaves from cavitation also disperse polymers effectively.

Features

- High Safety** Overload protection for long industrial operation.
- High Strength** Powerful crushing with fine particle size (20-100 μ m).
- Custom Service** Optional cooling circulator for temperature control.
- Smart Control** Microcomputer for precise function adjustment.
- High Efficiency** Processes 1L samples in just 15 minutes.
- Easy Operation** Independent systems for simple maintenance.



Application Areas

- Cosmetics Industry**
Refining cosmetic particles
- Bioengineering**
Extracting essential oils, natural compounds, polysaccharides, flavonoids
- Materials Engineering**
Producing non-ferrous metals, nanomaterials, rare-earth materials
- Chemical Engineering**
Ultrasonic gel liquefaction, resin defoaming
- Environmental Engineering**
Polluted water degradation

Technical Parameters

Working Voltage	220V, 50Hz
Working Frequency	15kHz
Ultrasonic Power	2400W
Duty Cycle	1%—99%
Processing Capacity	1-5L per cycle
Time Settings	(1) Ultrasonic Time: 1-99s (2) Interval Time: 1-99s (3) Total Time: 1-99min
Horn Tip Diameter	38mm
Display	Analog dial/Digital tube

UP-250 SERIES PORTABLE ULTRASONIC HOMOGENIZER

Description

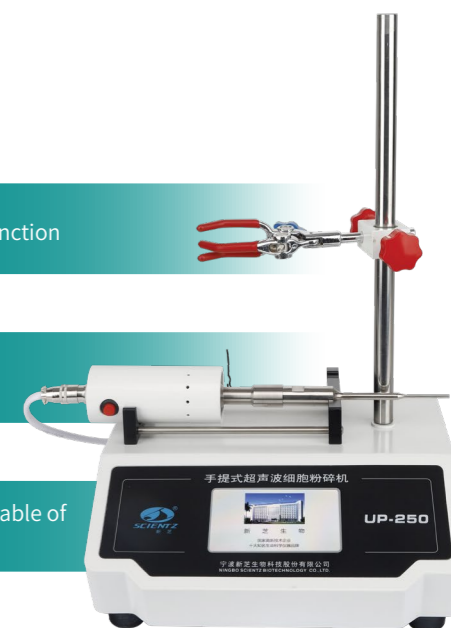
The portable ultrasonic homogenizer is a portable, multi-functional sample preparation instrument. Compared to traditional portable ultrasonic homogenizer, the handheld version offers greater flexibility, efficiency, and portability. It is ideal for emulsification, dispersion, homogenization, extraction, degassing, cleaning, preparation of nanomaterials, and acceleration of chemical reactions, particularly for small-volume, high-throughput samples (such as those in 96-well plates or small tubes). The UP-250S model features an independent battery design, making it suitable for field research, on-site testing, and vehicle-based inspections. It can operate continuously for up to 4 hours on its built-in lithium battery without an external power source, making it an essential sample preparation tool for environmental protection and food safety monitoring vehicles.

Product Principle

Based on the cavitation effect of ultrasonic waves in liquids, the transducer converts electrical energy into mechanical energy through an amplitude transformer, creating high-intensity shear forces in the liquid at the tip of the tool. This generates alternating high-frequency water pressure, causing cavities to expand and collapse, leading to the disruption of cells. The "cavitation" effect of ultrasonic waves in the fluid medium produces cavities and bubbles, which release powerful pressure peaks upon rupture. Additionally, the shock waves generated by the cavitation effect of ultrasound in liquids are used to achieve the dispersion of polymers.

Features

- Portable Design**
- High safety:** over-temperature alarm function
- Selectable modes**
- Wide applicability**
- Flexible parameters:** Power and ultrasonic duration are adjustable.
- Independent lithium battery:** capable of continuous operation for 4 hours
- Easy operation**



Application

- Bioengineering**
- Materials Engineering**
- Chemical Engineering**
- Biopharmaceuticals**

Technical Parameters

Model	UP-250	UP-250S
Max Power	250W	250W
Size	270*245*116mm	122*252*200mm
Operating Mode	Automatic, manual switchable (optional foot switch)	
Pulser	0.1-99s	0.1-99s
Frequency Range	19-25KHz	19-25 KHz
Time Setting	0.1-99min	0.1-99 min
Tip	3mm	3 mm
Processing Capacity	100 μ l-10ml	100 μ l-10 ml
Power Supply	220V/50Hz	2A/12V Charger (built-in 12V/1000mAH lithium battery)
Display	4.3-inch touch screen	4.3-inch touch screen

SCIENTZ-650J INTEGRATED ULTRASONIC HOMOGENIZER

Features

- All-in-one:** Integrated, all-in-one design that takes up less lab space
- Test function:** Pulsed and continuous operation with test function
- Electric lift:** Standard with remote-controlled lifting.
- Precision:** Ultrasonic time, gap time can be accurate to 0.1 seconds
- Low noise:** The chassis is surrounded by three-dimensional environmentally friendly acoustic panels to reduce noise pollution
- Alarm function:** With overload, over-temperature, time alarm function
- Intelligent:** Programmable ultrasound program
- Superior quality of material:** TC4 Military-Grade Titanium Alloy Amplitude Brake
- Flexible parameters:** Ultrasonic power step is continuously and finely adjustable by 1%.
- High cleanliness:** Smooth interior for easy wiping

Technical Parameters

Model	SCIENTZ-650J
Power	20-25KHz
Display Mode	7-inch capacitive touch screen
Ultrasonic Power	650W(1%-100%)
Accompany Tip	6 mm
Optional Tip	2mm、3mm、8mm、10mm、13mm
Capacity	100ul-250ml
Alarm Temperature	0-99.9°C
Host Size	312*334*510mm
Transducer Lifting Method	Electric, with optional remote-controlled lifting.
Interior Lighting	YES
Sterilization Function	YES



SCIENTZ-650L INTEGRATED ULTRASONIC HOMOGENIZER

Features

- All-in-one:** Integrated, all-in-one design that takes up less lab space
- Test Function:** Pulsed and continuous operation with test function
- Electric Lift:** Remote control lift available as an option
- Precision:** Ultrasonic time, gap time can be accurate to 0.1 seconds
- Low Noise:** The chassis is surrounded by three-dimensional environmentally friendly acoustic panels to reduce noise pollution
- Alarm Function:** With overload, over-temperature, time alarm function
- Intelligent:** Programmable ultrasound program
- Superior Quality Of Material:** TC4 Military Grade Titanium Transducer
- Flexible Parameters:** Ultrasonic power step is continuously and finely adjustable by 1%.
- High Cleanliness:** Smooth interior for easy wiping
- Refrigeration Function:** Built-in refrigeration; no external device needed.

Technical Parameters

Model	SCIENTZ-650L
Frequency	20-25kHz
Display Mode	7-inch capacitive touch screen
Power	650W(1%-100%)
Standard Probe	6mm
Optional Probe	2mm、3mm
Sample Volume	100ul-50ml
Alarm Temperature	0-99.9°C
Dimensions	312*334*620mm
Transformer Lifting Method	Electric, equipped with remote control lifting as standard
Interior Lighting	Yes
Refrigeration Temperature	-4°C-Room temperature
Adapter	Standard configuration: 50ml refrigeration adapter Optional: 0.2ml、0.5ml、2mL、5ml、10ml、15ml refrigeration adapter



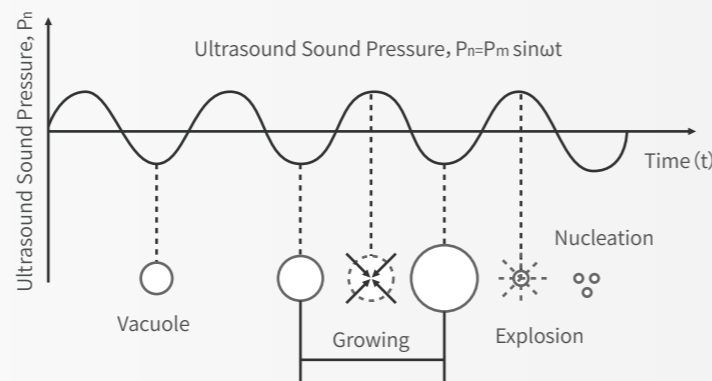
SCIENTZ-2000J MULTIFUNCTIONAL INTEGRATED ULTRASONIC HOMOGENIZER

Description

This product is an ultrasonic cell disruptor that can perform disruption in sealed containers under sterile and ultra-micro conditions, and is compatible with samples of different volumes (select the corresponding ultrasonic mode according to the sample volume). Compared with traditional probe-type ultrasonic cell disruptors and non-contact ultrasonic cell disruptors, this instrument has the advantages of being able to process multiple small-volume samples simultaneously in one run to avoid sample cross-contamination, while also being capable of handling larger-volume samples. The instrument comes standard with a low-temperature thermostat, allowing samples to be processed in a 4-10°C environment, which ensures uniform energy distribution and complete ultrasonic action. It has become a new multifunctional tool for research applications such as animal cell disruption, microbial disruption, ChIP (Chromatin Immunoprecipitation), and DNA digestion.

Working Principle

Based on the cavitation effect of ultrasonic waves in liquids, the transducer converts electrical energy into high-intensity shear forces in the liquid at the top of the tool head through the horn, generating high-frequency alternating water pressure. This causes cavitation bubbles to expand and implode, thereby disrupting cells. In addition, the intense agitation effect generated when ultrasonic waves propagate in the liquid imparts significant acceleration to particles, leading to their collision with each other or the vessel wall, which achieves the effects of disruption, emulsification, and separation.



Features

-  **High Compatibility** Compatible with both contact and non-contact ultrasonic modes
-  **Isothermal Control** Works with a cooling water circulation system Integrated Sound
-  **Insulation Cabinet** Compact footprint with a large viewing window for clear observation of experimental results
-  **Alarm Function** Equipped with overload, over-temperature, and time alarms
-  **Test Function** Supports pulse and continuous operation, with a built-in test function
-  **Low Noise** Surrounded by three-dimensional eco-friendly acoustic insulation panels to reduce noise pollution
-  **Digital Power Supply** Automatically adapts to and tracks the optimal frequency without manual gear switch adjustment
-  **Electric Lifting** Transducer can be lifted and lowered via remote and electronic control

Application



Laboratory



Biological Engineering



Materials Engineering

- High-throughput sample mixing and emulsification
- Bacterial disruption
- Animal cell disruption
- Chromatin Immunoprecipitation (ChIP) assay



Technical Parameters

Model	SCIENTZ-2000J
Display Mode	7-inch capacitive touch screen
Ultrasonic Frequency	20~25kHz
Ultrasonic Power	2450W (1%~100%)
Total Working Time	1~999min
Ultrasonic On Time	0.1~99.9s
Interval Time	0~99.9s
Material of Ultrasonic Horn	TC4 titanium alloy
Disruption Capacity	100ul~100ml
Alarm Temperature	0~99.9°C
Total Working Time	1~999min
Temperature Display	Yes
Matching Chiller	Standard configuration
Internal Lighting	Yes
Disinfection Function	Yes
Operating Temperature	0~55°C
Storage and Transportation Temperature	-25~70°C
Relative Humidity	30%~90%, no condensation



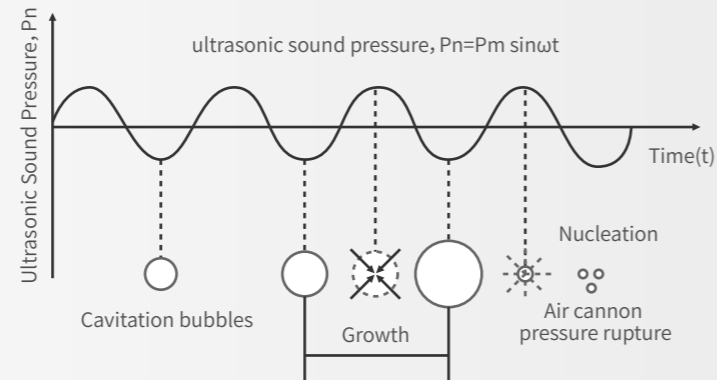
SCIENTZ-E SERIES ULTRASONIC HOMOGENIZER

Description

Intelligent ultrasonic homogenizer is divided into standard, common and pilot models, it is suitable for different volume samples (based on different volumes to choose the corresponding models and probes) processing. It has the advantages of network control, remote printing, UV sterilization, continuously adjustable time and power. It can crush various kinds of animal and plant tissues, cells and bacteria, and can be used for emulsification, separation, dispersion, extraction, cleaning and accelerating chemical reactions. Widely used in life science, material science and environmental protection and other fields.

Working Principle

Based on the cavitation effect of ultrasound in liquids, the transducer transfers electrical energy through the amplitude-variable rod in the liquid at the top of the tool head to produce high-intensity shear force the formation of high-frequency alternating water pressure intensity so that the cavity expansion, explosion will be broken cells. in addition, the use of ultrasonic propagation in the liquid to produce violent perturbation effect, so that the particles produce a large acceleration, thus colliding with each other or collision with the wall to achieve the effect of crushing, emulsification and separation.







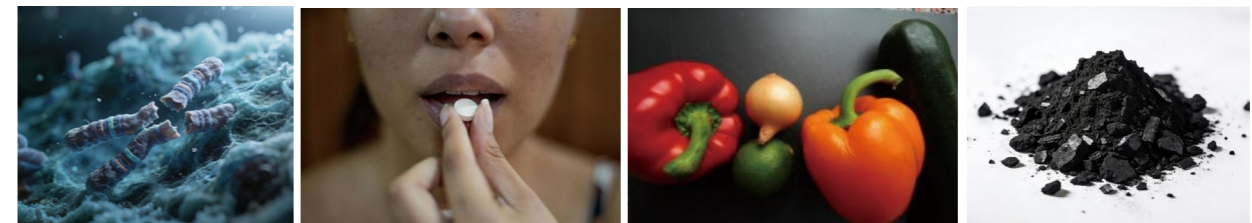
Features

-  **Online Control**
Remote communication interface for network control.
-  **Parameter Flexibility**
Ultrasonic time, power continuously adjustable, good stability;
-  **Wide Range Of Treatments**
with a crushing volume of 50μl-1200ml;
-  **High Safety**
With over-temperature, overload and time alarm function;
-  **Space-Saving**
Up and down stacking design, saving laboratory space;
-  **Data Storage**
Can create and store up to 20 sets of operating procedures;
-  **Electric Base**
Base position adjustable via buttons, easy operation.
-  **Easy to observe**
External transparent front door, built-in LED light;



Application

-  **Bioengineering**
Fragmentation of cells, bacteria, viruses, spores and other cellular structures. Preparation of DNA fragmentation.
-  **Foodstuffs Engineering**
Ultrasonic homogenization of drinks. Mellowing and aging technology for wine.
-  **Environmental Project**
Homogenized soil, rock samples. Study of the structural and physical characteristics of rocks.
-  **Pharmaceutical R&D**
Dispersion of pharmaceutical substances for injection. Dispersion and extraction of Chinese herbs.



Technical Parameters

Model	SCIENTZ-650E (For small volume samples)	SCIENTZ-950E (For small volume samples)	SCIENTZ-1200E (For large volume samples)
Power range	5 ~ 650W adjustable	5 ~ 950W adjustable	50 ~ 1200W adjustable
Frequency	20-25kHz self-adaptive	20-25kHz self-adaptive	20-25kHz self-adaptive
Processing Volume	100μl ~ 500ml	100μl ~ 600ml	50 ~ 1200ml
Timing	1~999min	1~999min	1~999min
Temperature	0°C~99°C	0°C~99°C	0°C~99°C
Alarm	Temperature, time, fault	Temperature, time, fault	Temperature, time, fault
	Automatic soundproof box with Electric lift base	Automatic soundproof box with Electric lift base	Automatic soundproof box with Electric lift base
Soundproof Box	322*285*526mm	322*285*526mm	322*285*526mm
	1 main unit, 1 transducer	1 main unit, 1 transducer	1 main unit, 1 transducer
Standard	Φ6mm tip	Φ6mm tip	Φ20mm tip
	1 set of software	1 set of software	1 set of software
Optional Tip	Φ2, Φ3, Φ10, Φ12	Φ2, Φ3, Φ10, Φ12, Φ15	Φ15, Φ25
Optional Cup	30ml, 100ml, 400ml	30ml, 100ml, 400ml	100ml, 400ml
Display	Amplitude, power, temperature, time	Amplitude, power, temperature, time	Amplitude, power, temperature, time

SCIENTZ08-IIIA DNA SHEARING SYSTEM

Description

The SCIENTZ08 - IIIA non - contact ultrasonic DNA shearing instrument uses isothermal, non - contact means to shear, homogenize and mix samples. Suitable for aseptic, ultra - micro disruption, it can shear chromosomes through centrifuge tubes. Tailored for next - gen sequencing DNA samples and chromatin immunoprecipitation sample pretreatment. Ideal for labs handling multiple or precious samples daily, offering high - throughput, low sample loss, and no cross - contamination. It's becoming a key standardized tool for CHIP and DNA shearing research.

Certified by CE and ROSH, it meets relevant production standards.

Operational Principle

Designed with an ultrasonic generator at the water tank bottom. Unlike traditional probe - type ultrasonic devices with limited radiation area, this non - contact model has wide, even ultrasonic distribution, reducing foam. Its automatic continuous rotation of centrifuge tubes further evens out ultrasonic energy. Samples in independent, fully - sealed tubes ensure no cross - contamination, no aerosol spread, and enhanced bio - safety.



Product Features

Digital Display Screen 7-inch touchscreen

Data Storage 50 groups

Adjustable Time From 0.1 second to nearly 200hours

Adjustable Power From 1% to 100%

Broadband Ultrasound Frequency automatically adapts within the range of 20-400KHz



Applications



Food Industry



Agriculture and Forestry Science



Biological Engineering

Cell Disruption

Micro - Emulsification

Protein Extraction

DNA Shearing

Inclusion Body Extraction

Chromatin Immunoprecipitation and Other Fields

Installation of Rotation Assembly



Centrifuge Tube Tightening Lower Cover

Adapter

Sample Tube

Figure 1: Installation of Sample Placement



Figure 2: Installation of Sample Rack Placement

Specifications

Model	SCIENTZ08-IIIA
Frequency	Automatically adapts within the range of 20 - 400kHz
Display	7 - inch high - precision touchscreen
Power	2500W(0-100%)
Ultrasonic Time	0.1s - nearly 200 hours, adjustable
Working Time	0.1s - 99.9s, adjustable
Pause Time	0s - 99.9s, adjustable (set to 0 for continuous mode)
Duty Cycle	1 - 99.9%
Volume of Water Tank	2.3L
Sample Processing Capacity	Up to 60 0.1ml samples at most
Adaptors	Standard: 2 sets of 8×1.5/2ml, 2 sets of 20×0.5ml, 2 sets of 30×0.1ml centrifuge tube sample racks
Voltage	220V/50Hz
Cooling System	Standard - configured constant - temperature water bath
Temperature Range	2-40°C
Temperature Precision	0.1°C

SCIENTZ08-IIIB DNA SHEARING SYSTEM

Description

The SCIENTZ-08-III Non-contact Ultrasonic DNA Shearing Instrument uses an isothermal and non-contact method to shear and mix samples. It is suitable for sterile, ultra-trace fragmentation and can shear chromosomes through centrifuge tubes. Tailor-made for the pretreatment of DNA samples for next-generation sequencing and Chromatin Immunoprecipitation (ChIP) experimental samples, it offers advantages such as high throughput, low sample loss, and no cross-contamination for laboratories that process multiple or valuable samples daily. It has gradually become an indispensable standardized tool for ChIP (Chromatin Immunoprecipitation) and DNA shearing research platforms.

Working Principle

The SCIENTZ08-IIIB Ultrasonic DNA Shearing Instrument is designed with an ultrasonic generator installed on the outside of the water tank. In traditional probe-type ultrasound systems, the microflow phenomenon and ultrasonic cavitation effect can only occur in the area close to the probe, resulting in high ultrasonic intensity per unit area but a small radiation range. In contrast, the non-contact ultrasonic DNA shearing instrument installs ultrasonic transducers on the outside of the water tank, allowing the entire water tank to be fully within the range of ultrasonic action. This ensures a wide and uniform distribution of ultrasonic energy, reducing foam formation. During experiments, the instrument automatically rotates the centrifuge tubes continuously, further optimizing the uniformity of ultrasonic energy distribution.

During operation, samples are placed in separate, fully sealed centrifuge tubes. This design eliminates cross-contamination between samples, prevents aerosol transmission, and enhances the biosafety of experiments.



Features

Digital Display Screen 7-inch touch screen

Intelligent Storage Can store up to 50 sets of experimental data

Adjustable Time Sonics can be adjusted from 0.1 seconds to 199 hours 59 minutes

Adjustable Power Power can be adjusted from 1% to 100%

Broadband Ultrasound Automatically adapts to frequencies from 40 kHz to 100 kHz



Application



Food Industry



Agricultural and Forestry Sciences



Bioengineering

- Animal cell disruption
- Protein extraction
- Inclusion body extraction
- Micro-emulsification
- DNA fragmentation
- Chromatin immunoprecipitation and many other fields

Installation of Sample Rotation Assembly

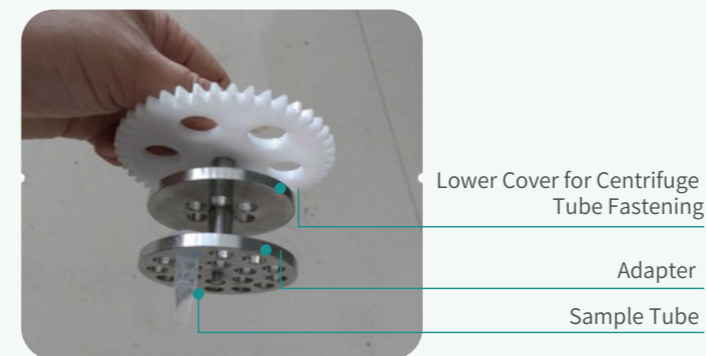


Figure 1: Sample Placement and Installation



Figure 2: Sample Rack Placement and Installation

Technical Parameters

Model	SCIENTZ08-IIIB
Frequency	40-100kHz, automatically adaptive
Display	7-inch high-precision touch screen
Power	2500W(0-100%)
Total Ultrasonic Time	0.1s-199h59min59.9s, adjustable
Working Time	0.1s-99.9s, adjustable
Interval Time	0s-99.9s, adjustable (set to 0 for continuous mode)
Duty Cycle	0.1-99.9%
Ultrasonic Water Tank Capacity	2.3L
Sample Processing Capacity	Maximum 60 x 0.1mL samples
Adapter Standard	2 sets of 8×1.5/2.0mL, 2 sets of 20×0.5/0.65mL, 2 sets of 30×0.1/0.2mL centrifuge tube racks; Optional: 5×5mL, 6×10mL, 3×50mL centrifuge tube racks
Operating Voltage/Frequency	220V/50Hz
Cooling System	Standard independent constant temperature host
Temperature Control Range	2-40°C
Temperature Display Accuracy	0.1°C

SCIENTZ08-IIID DNA SHEARING SYSTEM

Description

SCIENTZ08-IIID Non-Contact Ultrasonic DNA Shearing Instrument: It disrupts and mixes samples via an isothermal, non-contact method, enabling sterile, ultra-trace fragmentation and chromosome shearing through centrifuge tubes. Tailor-made for NGS DNA and ChIP sample pretreatment, it delivers high throughput, minimal sample loss and zero cross-contamination, ideal for labs processing multiple or precious samples daily. Now an indispensable standardized tool for ChIP and DNA shearing research.

Working Principle

Designed with an ultrasonic generator in the water bath. Unlike traditional probe-type ultrasonic devices (which only generate micro-flow and cavitation near the probe, featuring high local ultrasonic intensity but narrow radiation range), this non-contact instrument adopts a water-bath ultrasonic transducer, ensuring full coverage of the water bath with extensive and balanced ultrasonic energy, reducing foam formation.

During experiments, continuous automatic rotation of centrifuge tubes further optimizes ultrasonic energy uniformity. Samples are placed in individual sealed centrifuge tubes, eliminating cross-contamination and aerosol transmission, and enhancing experimental biosafety.



Features



Digital Display 4.3" medical-grade resistive touch screen



Smart Storage Capable of storing 50 sets of experimental data



Low Noise Designed with silent operation, noise level <55dB



Alarm Functions Overcurrent, overvoltage, and overtemperature alarm functions.



Selectable Modes Intermittent and continuous modes available.



Flexible Parameters Ultrasonic time and power continuously adjustable with high stability

Application



Food Industry



Agricultural &
Forestry Sciences

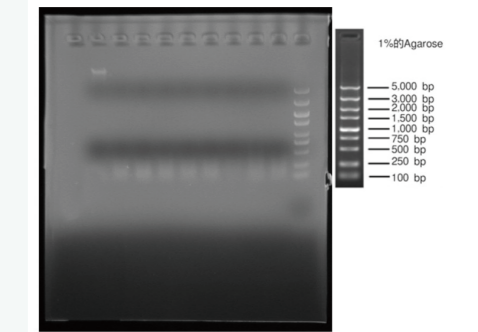
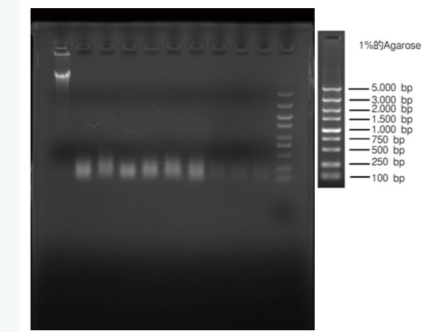
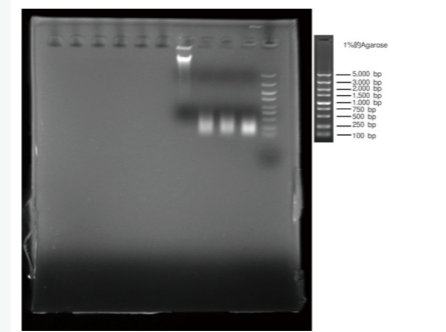


Bioengineering

- Animal Cell Disruption
- Protein Extraction
- Inclusion Body Extraction
- Emulsification
- DNA Fragmentation
- Chromatin Immunoprecipitation (ChIP)

Experimental Examples

DNA Fragmentation Range: Down to 200 bp. Sample Volumes in the Image (from left to right): 100 μ L, 200 μ L and 500 μ L respectively.



Technical Parameters

Model	SCIENTZ08-IIID
Tube Type	0.1ml-15ml
Display Type	4.3-inch Medical-Grade Resistive Touch Screen
Display Functions	Operation parameter, Time, Temperature, Power
Operation Mode	Pulsed/Continuous Mode
Total Ultrasonic Time	0.1s-9999mins (Adjustable)
Working Time	0.1s-99.9s (Adjustable)
Interval Time	0s-99.9s (Adjustable; 0s=Continuous Mode)
Adjustable Power	1-100%
Ultrasonic Tank Volume	300*150*100mm
Ultrasonic Sample Volume	Above 2 mL or below 5 μ L
Standard Adapters	32*0.1/0.2ml*3, 20*0.5/0.65ml*3
Adapter Material	316 Stainless Steel
Noise Level	<55dB
Cooling System	Portable Thermostat Main Unit (Compressor Cooling)
Temperature Range	2-40°C
Temperature Resolution	0.1°C
Cooling Capacity	600W
Sample Throughput	32 \times 0.1/0.2 mL \times 3 sets, 20 \times 0.5/0.65 mL \times 3, 12 \times 1.5/2 mL \times 3 sets, plus 5 \times 5-15 mL centrifuge tubes \times 3 sets



SCIENTZ08-IIIC DNA SHEARING SYSTEM

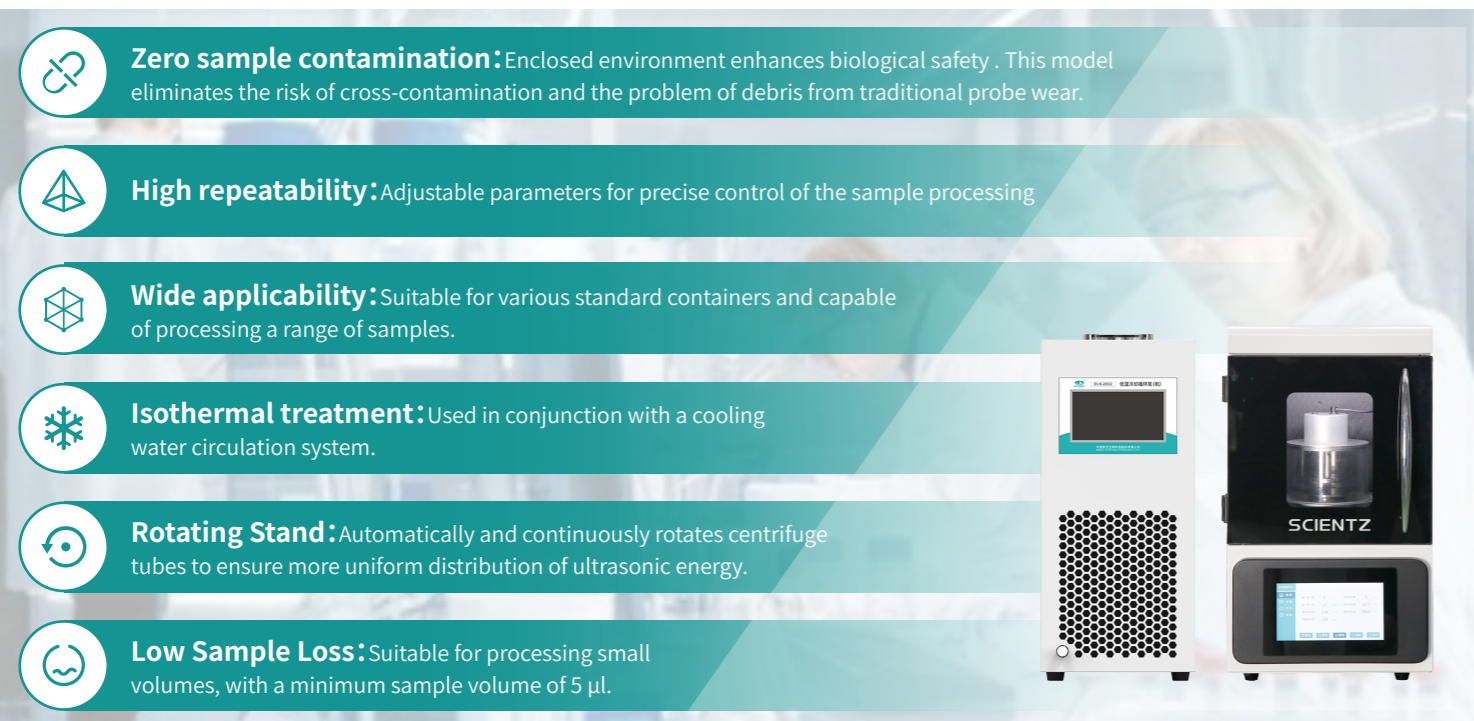
Description

No-touch ultrasonic homogenizer also known as a cup-type ultrasonic homogenizer, allows sample disruption in sealed containers, under sterile conditions, and with ultra-low sample volumes. Compared to traditional probe-type ultrasonic homogenizer, this instrument offers several advantages: the ability to process multiple samples simultaneously, high experimental efficiency, reduced need for frequent probe manipulation, and prevention of cross-contamination between samples.

Application

- ChIP assay (chromatin immunoprecipitation) sample preparation
- Bacterial and cell disruption and membrane protein extraction
- Ultrasonic processing of valuable reagents
- Sample preparation for high-throughput sequencing
- Homogenization and emulsification reactions

Product Features



- Zero sample contamination:** Enclosed environment enhances biological safety. This model eliminates the risk of cross-contamination and the problem of debris from traditional probe wear.
- High repeatability:** Adjustable parameters for precise control of the sample processing
- Wide applicability:** Suitable for various standard containers and capable of processing a range of samples.
- Isothermal treatment:** Used in conjunction with a cooling water circulation system.
- Rotating Stand:** Automatically and continuously rotates centrifuge tubes to ensure more uniform distribution of ultrasonic energy.
- Low Sample Loss:** Suitable for processing small volumes, with a minimum sample volume of 5 μ l.

Technical Parameters

Model	SCIENTZ08-IIIC	SCIENTZ08-II	SCIENTZ08-III
Frequency	20KHz (± 0.5 KHz)	40 KHz	40 KHz
Power	1800W	1800W	2200W
Power Adjust	1%-100%	1-99%	1-99%
Timing	1-999min	1-999min	1-999min
Duty Ratio	0.1-99.9%	0.1-99.9%	0.1-99.9%
Capacity	900ml	1.5L	3L
Temp. Display	YES	YES	YES
Holder	0.5ml*12 wells, 2ml*12 wells, 0.2ml*12 wells, support 5ml-50ml	1-2ml*16 wells, 5ml*8 wells, 10-15ml*8 wells	1-2ml*32 wells, 5ml*20 wells, 10-15ml*17 wells
Power Supply	220V ± 0.5 50Hz	220/110V ± 0.5 50Hz/60Hz	220/110V ± 0.5 50Hz/60Hz
Chiller	Support	/	/

SCIENTZ-T SERIES ULTRASONIC EXTRACTOR

Product Description

The SCIENTZ-T series ultrasonic extractor consists of an ultrasonic homogenizer, an energy-saving intelligent constant temperature bath, and a double-layer glass reaction kettle. This instrument incorporates the latest technologies, combined with microcomputer control, frequency selection, temperature measurement, and protection features, making it widely applicable in biochemistry, microbiology, pharmaceutical chemistry, surface chemistry, physics, agronomy, medicine, and pharmaceuticals.



Product Features

- Precise Temperature Control**
Equipped with temperature measurement functions for accurate control.
- Flexible Parameters**
Ultrasonic time, power, and stirring speed can be set freely within a range.
- Wide Applicability**
Configured with different models of reaction kettles to meet all laboratory needs.
- Intelligent Design**
Combines microcomputer control, frequency selection, temperature measurement, and protection technologies.

Application Areas

- Cosmetics Industry**
Extracting active ingredients and refining particles for dispersion and emulsification effects.
- Biopharmaceuticals**
Dispersion of injectable drugs, herbal extraction, preparation of suspensions, and vaccine formulation.
- Food Engineering**
Ultrasonic aging of wine—maturation technology.
- Chemical Engineering**
Treatment of silicon scale with ultrasound.

Technical Parameters

Product Model	SCIENTZ-5T	SCIENTZ-10T	SCIENTZ-15T	SCIENTZ-30T	SCIENTZ-50T
Operating Frequency	20-25kHz	20-25kHz	20-25kHz	20-25kHz	20-25kHz
Ultrasonic Power	20-1000 (W)	20-1200(W)	200-1500(W)	200-1800(W)	250-2400(W)
Double-layer Reaction Kettle Capacity	5L	10L	15L	30L	50L
Horn Diameter	$\Phi 30$	$\Phi 30$	$\Phi 30$	$\Phi 50$	$\Phi 50$
Operating Voltage	220V	220V	220V	220V	220V
Ultrasonic Time	0.1-99.9S	0.1-99.9S	0.1-99.9S	/	/
Gap Time	0.1-99.9S	0.1-99.9S	0.1-99.9S	/	/
Total Time	1-999min	1-999min	1-999min	1s-59min59s	1s-59min59s
Power Setting	1-99%	1-99%	1-99%	1-99%	1-99%
Duty Cycle	0.1-99.9%	0.1-99.9%	0.1-99.9%	/	/
Actual Temperature Measurement	Yes	Yes	Yes	Yes	Yes
Stirring Power	60W	60W	90W	120W	120W
Stirring Speed	10-600r/min	10-600r/min	10-600r/min	10-600r/min	10-600r/min
Support	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Additive Capacity Bottle	Yes	Yes	Yes	Yes	Yes
Inlet , Outlet	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Refrigeration Equipment	DLK-5003	DLK-5007	DLK-5010	DLK-5010	DLK-5010

CFU SERIES CONTINUOUS FLOW ULTRASONIC HOMOGENIZER

Description

Continuous flow ultrasound is a technology that utilizes the cavitation effect of ultrasonic waves to continuously or online process large volumes of bulk samples. This method achieves high-efficiency homogenization, mixing, and dispersion of samples in solution, effectively preventing issues such as material accumulation that can lead to clogging or agglomeration. It enhances reaction efficiency and is suitable for the dispersion of agglomerated products in vaccine or antibody production, as well as in chemical synthesis. Additionally, it can be used for the dispersion of metal oxides in reaction solutions and for cell disruption. The product consists of multiple components, including ultrasonic units, a reaction kettle, a circulation pump, and a cooling unit. Materials can continuously enter the reaction kettle for processing via the circulation pump, meeting large-volume processing requirements. The kettle features a double-layer cooling structure to ensure temperature stability throughout the reaction process and maintain sample activity. Furthermore, this product is equipped with an audit trail feature and three levels of access control to comply with the production regulations required by pharmaceutical companies.

Application



Vaccine



Dispersion



Chemical Synthesis



Emulsification

Vaccine Production In vaccine research and production, continuous flow ultrasound efficiently emulsifies and mixes components with adjuvants, enhancing stability and immunogenicity.

Material Dispersion Dispersing metal oxides and nanomaterials uniformly in solvents is essential for creating high-performance nano-coatings and nano-catalysts

Chemical Synthesis In the synthesis of fine chemicals, it is used for mixing and dispersing reactants, improving reaction efficiency and selectivity, facilitating the process, and increasing both yield and purity of the products.

Emulsification In food processing, it is used to emulsify immiscible liquids, such as oil and water, to create emulsified food products like salad dressings and ice cream. The efficient emulsification enhances the texture and stability of food products.

Features



Continuous Ultrasound Continuous flow ultrasonic disruption.



Touchscreen Operation Uses ARM embedded intelligent control with a touchscreen for simple, easy operation.



Audit Tracking Enables auditing and tracking of device usage, operational history, and other relevant information.



Titanium alloy Materials Titanium alloy transducers and rods offer durability and corrosion resistance.



Data Access and Storage Operational data can be recorded, exported, and traced



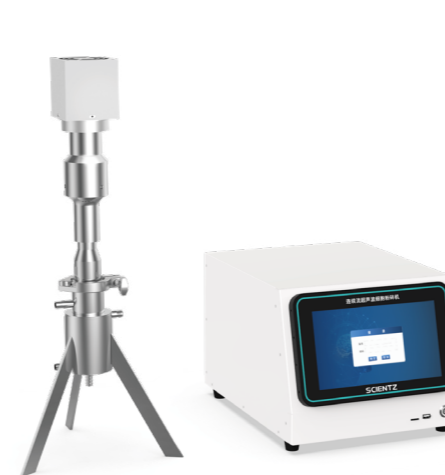
Communication Protocol Supports Modbus-TCP protocol and is compatible with SCADA systems



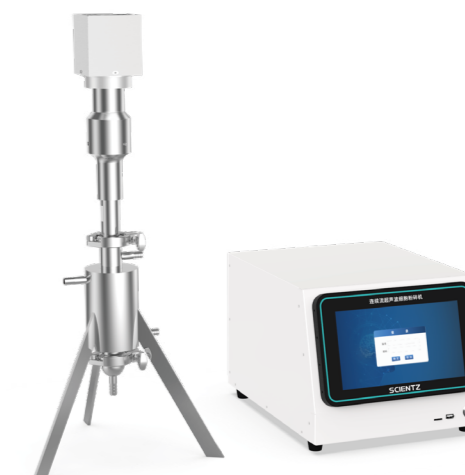
Access Control Three-level access management.



Cleaning and Sterilization The reactor's seamless inner wall ensures no dead corners and allows for steam or high-pressure sterilization after transducer removal.



CFU-750W-M1



CFU-750W-M2

Technical Parameters

Model	CFU-750W-M1	CFU-750W-M2
Recommended water bath	DC-3006	DC-3006
Frequency	20kHz±1kHz	20kHz±1kHz
Ultrasonic Type	Focused	Dispersion
Tips	20mm	20mm
Ultrasonic Rated Power	750W	750W
Material of Ultrasonic Reactor	SUS316	SUS316
Volume of Ultrasonic Reactor	150ml	200ml
Ultrasonic Power Setting	1%-100%	1%-100%
Ultrasonic Intermittent Setting	0-99s	0-99s
Ultrasonic Working Time Setting	1-99s	1-99s
Total Ultrasonic Time Setting	1-999min	1-999min
Ultrasonic Processing Volume	5~50L/h	5~100L/h
Operating Method	10-inch touchscreen	10-inch touchscreen
Communication Interface	RJ45 Ethernet	RJ45 Ethernet
Access Control	Three-level access management	Three-level access management
Data Recording Function	Built-in storage capability to save operational records; data can be exported via USB	
UPS	Optional	Optional
Time	Network time synchronization	Network time synchronization
User set	multiple user role settings	multiple user role settings
Ultrasonic kettle temperature control	-30°C-100°C	-30°C-100°C

ACCESSORIES

Soundproof box

Ultrasonic homogenizer in the process of operation, ultrasonic cavitation caused by the friction between the water and the tank body will produce greater noise (ultrasonic noise itself can not be heard), may have a certain impact on the laboratory acoustic environment. In order to reduce the noise during the operation of the instrument, SCIENTZ Bio launched a customized ultrasonic homogenizer soundproof box, in order to better meet customer needs, we have upgraded part of the series of soundproof, upgraded soundproof box with ultraviolet sterilization, box lighting, motorized lifting and other functions.

Intelligent lifting sterilized soundproof box



SCIENTZ-650E
SCIENTZ-950E
SCIENTZ-1200E

Intelligent lifting soundproof box



SCIENTZ-IID、JY88-IIN
JY92-IIN、JY92-IIDN
JY96-IIN、JY98-IIDN
JY99-IIDN

Box with transparent viewing window and light, operation process can be observed.

Box with transparent viewing window and light, operation process can be observed.

Motorized lifting table

Motorized lifting table

UV sterilization

How to choose probes

The selection of the tip is affected by the power of the host, the type of liquid and other factors, the following table is for reference only, please ask our sales for details.

Probe List

Model	Frequency	Amplification	Capacity
Φ2 1/12"	20-25kHz	300μm	0.5-5ml
Φ3 1/8"	20-25kHz	250μm	3-10ml
Φ6 1/4"	20-25kHz	220μm	10-100ml
Φ10 5/12"	20-25kHz/19.5-20.5kHz	150μm	100-200ml
Φ12 1/2"	20-25kHz	150μm	100-200ml
Φ15 5/8"	20-25kHz/19.5-20.5kHz	145μm	200-500ml
Φ18 3/4"	20-25kHz	100μm	200-500ml
Φ20 3/4"	19.5-20.5kHz	60μm	500-1000ml
Φ25 1"	19.5-20.5k Hz	40μm	500-1200ml



PROBE



Speicald Broken bottle

Cell Breaking Beads