

# Ultrasonic graphene Dispersion

RPS<sup>sonic</sup>

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RPS-SONIC

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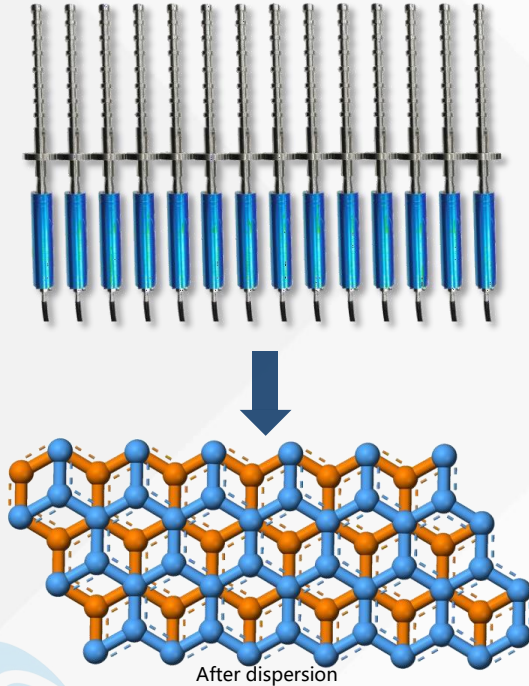
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# Introduction



The application of ultrasonic equipment in the preparation of graphene is mainly in the volumetric thermal layer method and the redox method. These two methods are simpler to operate and cost less than other preparation methods. Due to the cavitation in the liquid, the micro-jet, vibration and other phenomena are formed.

On the microscopic level, the suspended particles in the liquid act as a high-speed stirring, dispersing, breaking and separating.

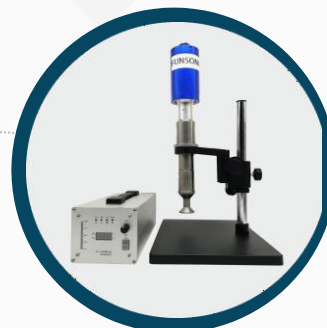
## Sonochemistry equipments



3000W



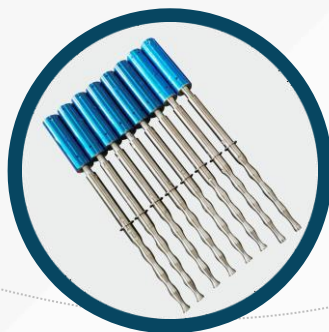
2000W



1200W



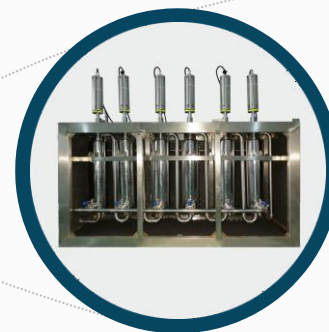
Graphene  
dispersion  
(Three in One)



3000W  
customized



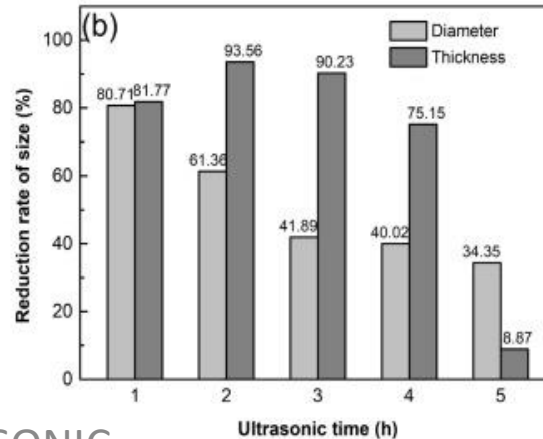
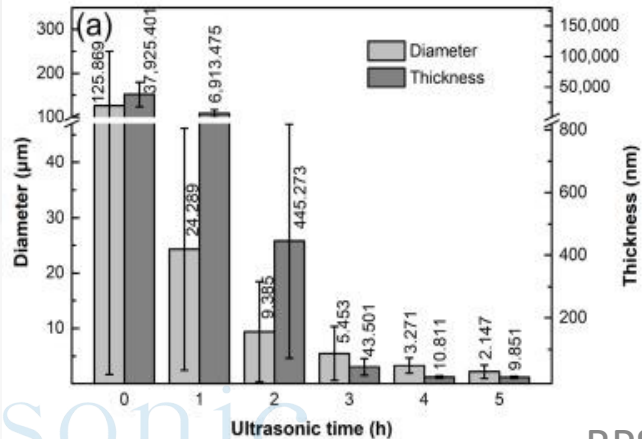
lab equipment



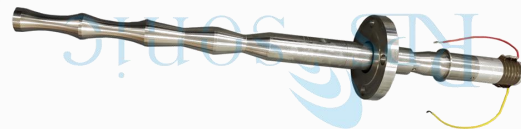
Graphene  
dispersion  
(Six in One)

# Features

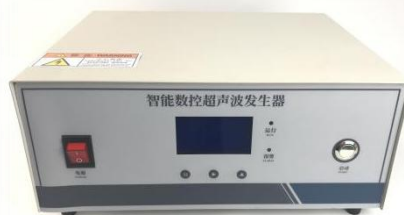
- 1) Intelligent control technology, stable ultrasonic energy output, stable work for 24 hours per day.
- 2) Automatic frequency tracking mode, ultrasonic transducer working frequency real-time tracking.
- 3) Multiple protection mechanisms to extend service life to more than 5 years.
- 4) Energy focus design, high output density, improve efficiency to 200 times in the suitable area.
- 5) Support static or cyclic working mode .



## Components



Generator Item no.	RPS-GS203A
Frequency	20Khz
Max power (W)	3000W
Input voltage	175~240V
Input frequency	50/60H
Dimension	350(L)*310(W)*150(H)
G.W.	9KG



## Other applications



### Extraction

Ultrasonic extraction and separation has become an important technology for extracting active substances or other beneficial substances from animals, plants, microorganisms, etc. It is mainly based on the design disciplines of the active ingredient and the existence state, polarity, solubility and so on of the active ingredient in the substance. ultrasonic vibration extract , can help the solvent quickly enter the solid material. The organic matter contained in the substance is as completely dissolved in the solvent as possible to obtain a multi-component mixed extract.



### Ultrasonic emulsification

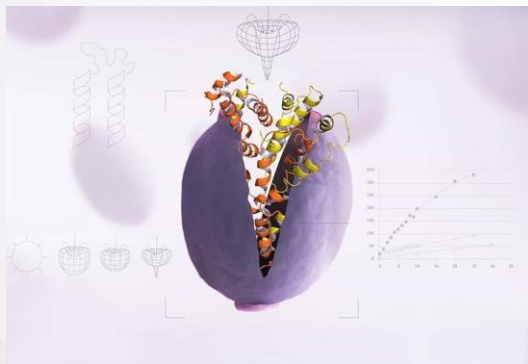
Under the deal of ultrasonic energy, two or more immiscible liquids can be mixed together, and one liquid can be uniformly dispersed in another liquid to form an emulsion liquid. This treatment technique is called ultrasonic emulsification. Ultrasonic emulsification technology has been widely used in food, paper, paint, chemical, pharmaceutical, textile, petroleum, metallurgy and other industrial fields.



### Ultrasonic dispersion

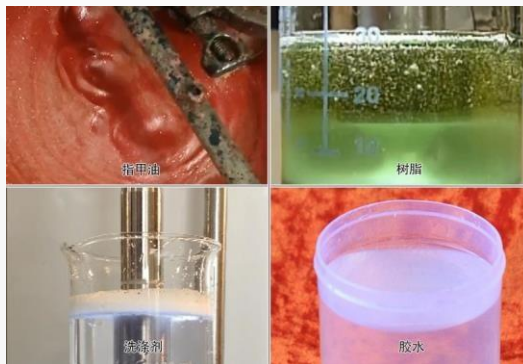
Dispersing powder into liquid is an important step in formulating various products such as paints, inks, coatings and other polishing media. Using power ultrasound to apply high shear and strong stress to liquids, powders, liquid mixtures and slurries is an efficient and energy-saving method. Our processors can achieve uniform dispersion, de-aggregation and grinding on laboratory and industrial scales

## Other applications



### Ultrasonic cell disruption

Cell disruption is an important step in recombinant protein production procedures. We offer laboratory, bench and industrial-scale high-amplitude ultrasonic processors, which can be used for efficient cell disruption. The processors are based on our patented Barbell Horn® Ultrasonic Technology



### Ultrasonic Degassing

Degassing is removal of gases contained in a liquid, both dissolved and present in the form of bubbles. There several methods for removal of gases from liquid based on different physical effects. One of the best methods is ultrasonic degassing, i.e. gases removal due to liquid treatment by acoustic vibrations in the ultrasonic range. This method is good due to low power required and high efficiency.



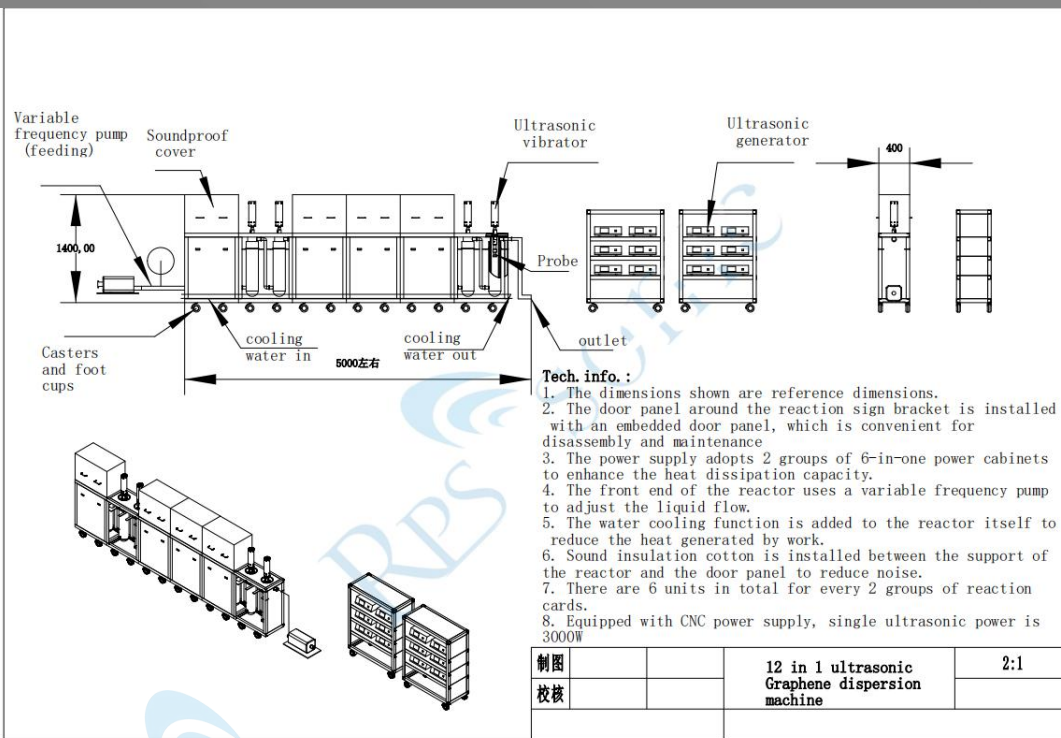
### Ultrasonic Mixing

The ultrasonic mixing is used to disperse nano-sized particles into liquids, such as water, oil, solvents, or resins. The application of ultrasonic to nanomaterials has multiple effects. The most obvious is the dispersing of nanomaterials in liquids to break particle agglomerates.



# Customer cases

## Case 1



25 Tons Graphene  
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## Case 2



100 Tons Graphene

# Parameter

## U Type Graphene Dispersion System

Equipment item no.	RPS-GS10	RPS-GS25	RPS-GS50	RPS-GS100
Aunal Graphene production capacity (work 8h/day)	10TON	25TON	50TON	100TON
Single set of rated power	3000W			
Total rated power	18000W=3000WX6 SETS	36000W=3000WX12S ETS	72000W=3000WX24S ETS	144000W=3000WX48 SETS
Frequency	20KHZ±1KHZ			
Input Voltage	220V/380V 50Hz			
Installation area	5m <sup>2</sup>	10m <sup>2</sup>	20m <sup>2</sup>	40m <sup>2</sup>
Features	Adopt network-based Mod-bus bus technology, all working condition parameters can be remotely controlled by the computer room			

# Partaeter

## Industry Sonochemistry Equipment

Model/Data	Sono-20-1000	Sono-20-2000	Sono-20-3000	Sono-15-3000
Frequency	$20 \pm 0.5$ KHz	$20 \pm 0.5$ KHz	$20 \pm 0.5$ KHz	$15 \pm 0.5$ KHz
Power	1000W	2000W	3000W	3000W
Voltage	110/220V			
Temperature	300°C			
Pressure	35 MPa			
Intensity of sound	20 W/cm <sup>2</sup>	40 W/cm <sup>2</sup>	60 W/cm <sup>2</sup>	60 W/cm <sup>2</sup>
Max Capacity	10 L/Min	15 L/Min	20 L/Min	20 L/Min
Horn Material	Titanium			

# Partaeter

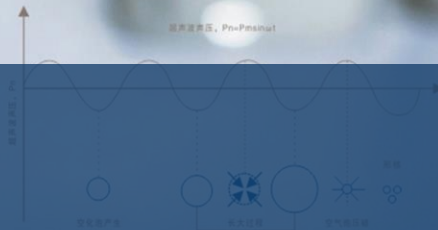
## Lab Sonochemistry Equipment

Model/Data	Sono-20-1000	Sono-20-2000	Sono-28-800	Sono-40-500
Frequency	20khz	20khz	28khz	40khz
Power	1000w	2000w	800w	500w
Max Capacity	5L	10L	2L	1L
Temperature	300°C			
Horn Material	Titanium alloy			



空化现象

观察波声压:  $P_{in} = P_{in} \sin \omega t$



空化过程

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