

What is the potential of power ultrasound?

The potential of power ultrasound involves physical and chemical processes. The physical processes are mainly due to the mechanical effects of the high intensity waves in a medium while the chemical processes are the chemical effects induced by ultrasonic cavitation in liquids.

Does power ultrasound increase process intensification?

Study by Francony et al. indicated that the higher frequency of power ultrasound up to 500kHz would produce the higher quantum of free radicals as compared to the lower frequency of power ultrasound. Therefore, there ought to be an optimum frequency under which the maximum process intensification benefits can be obtained by power ultrasound.

Can power ultrasound be used to extract bioactive compounds?

In recent ten years, many researchers have managed to apply the power ultrasound to the bioactive compounds extraction from natural products including herb, plants, vegetables, fruits, and among others as listed in Table 4, , , , , .

What are the benefits of power ultrasound for chemical reactions?

According to the studies, the potential benefits of power ultrasound brought for the chemical reactions include much higher reaction rate or shorter reaction time, lower energy consumption, better catalyst effectiveness and less use of hazardous raw materials participating in the chemical processes. Table 2.

Can ultrasound help a hybrid drying process?

The recent studies on the hybrid drying method with ultrasound are listed in Table 3. From these studies, it can be seen that the introduction of ultrasound to the drying could greatly accelerate the drying process and shorten the drying time without causing a noticeable temperature increase in the materials.

Why is power ultrasound used in liquid suspensions?

For example, power ultrasound is used in liquid suspensions for particle dispersion and in gas suspensions for particle agglomeration. Such apparently contradictory behavior is clearly due to the different mechanisms activated by the ultrasonic energy, which mainly depend on the specific medium.

3 Description of your Solar PV system Figure 1 - Diagram showing typical components of a solar PV system
The main components of a solar photovoltaic (PV) system are: Solar PV panels - ...

To reduce greenhouse gas 13 emissions and speed up the shift to renewable energy, solar power plants are crucial [15], [16]. 14 Some essential features and parts of solar power plants are as ...

We developed multiple solar collecting systems using a combination of polycrystalline, monocrystalline, and thin-film solar arrays paired with different powerbanks and tested them ...

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