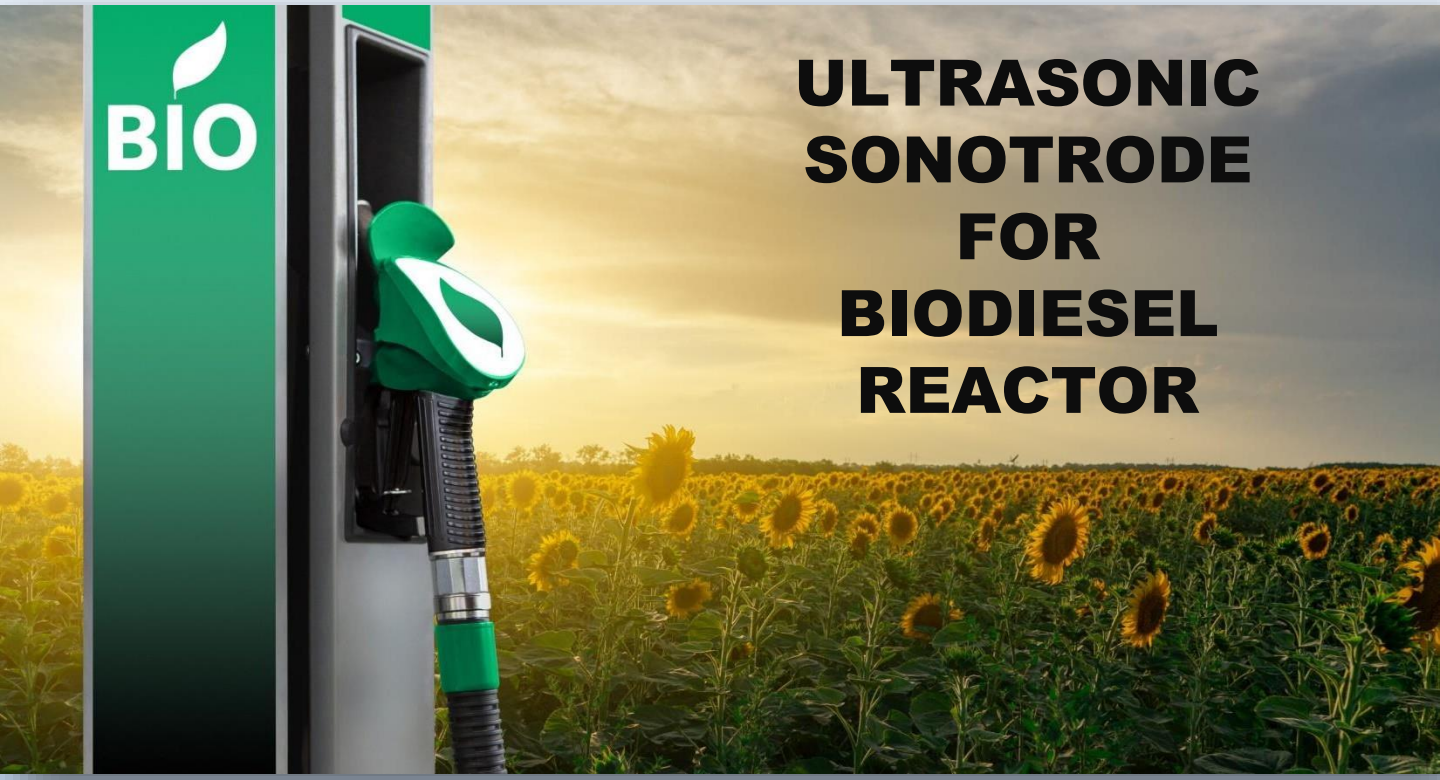
MTEKSONIC™
ULTRASONIC INNOVATIONS



ULTRASONIC SONOTRODE FOR BIODIESEL REACTOR

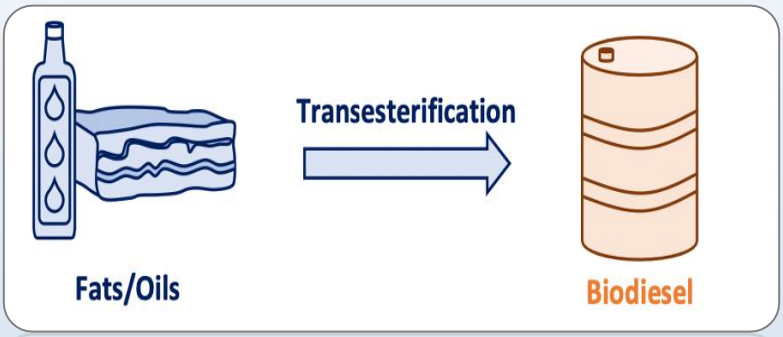
WE ARE COMMITED TO DELIVERING INNOVATION, EFFICIANCY AND SUSTAINABILITY

www.mteksonic.com

Ultrasonic Biodiesel Sonotrode

Ultrasonic reactors/Sonotrode improve chemical reaction of the biodiesel conversion process. This leads to a faster transesterification, higher conversion yield, and it saves excess methanol and catalyst. Ultrasonic mixing reactors for the production of biodiesel at any scale. The ultrasonic reactors are compact, easy to install and very efficient.

INTRODUCING ULTRASONIC BIODISEL TECHNOLOGY



1 **Flexibility and Adaptability**

Sonotrode can be mounted in any direction, easily retrofitting existing systems.

2 **Efficiency and Sustainability**

Reduces the process time, additive usage, and energy consumption.

BENEFITS

Faster reaction rate: The ultrasonic waves can increase the mass transfer of the reactants and accelerate the transesterification reaction, reducing the reaction time and increasing the yield of biodiesel.

Higher yield and purity: The ultrasonic biodiesel process improves the dispersion of the catalyst and the homogeneity of the reaction mixture, leading to a higher yield and purity of biodiesel. Using ultrasonics, you can use lowest feedstock quality such as waste cooking oils and turn it into high-quality biodiesel.

Flexibility and scalability: Probe-type ultrasonicators and reactors can be used for both small-scale and large-scale production of biodiesel, and can be easily integrated into existing production processes.

Lower energy consumption: The use of ultrasonication reduces the energy required for mixing and heating the reaction mixture, as well as the amount of catalyst needed, resulting in a more sustainable and cost-effective process.

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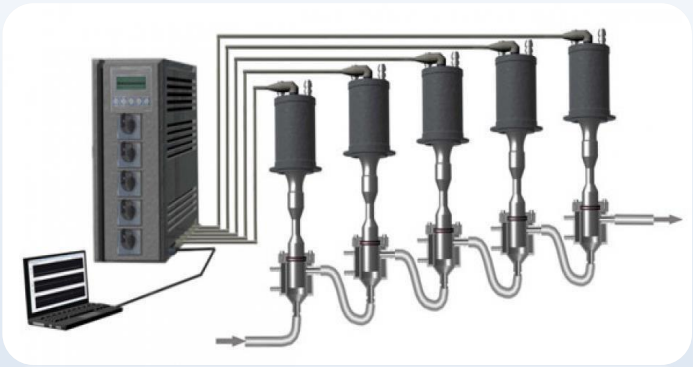
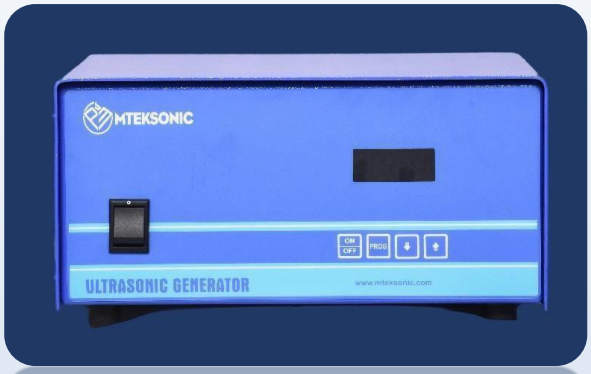




TECHNICAL SPECIFICATIONS :

FREQUENCY	18 TO 22 KHZ +/- 3 KHz
RESONATOR CONSTRUCTION	S.S 316 L OR TITANIUM MATERIAL
POWER EFFICIENCY	1000 WATTS TO 4000 WATTS (Joule /second)
VARIABLE POWER	AMPLITUTE SETTING 50% TO 100% ADJUSTABLE
ULTRASONIC GENERATOR	MICROCONTROLLER IGBT/MOSFET BASE WITH OVER HEAT PROTECTION
GENERATOR INBUILT FUTURES	TIMER, SOFT START, FREQUENCY DISPLAY
AUTOMATION CYCLE	GENERATOR START MANUAL OR TIMER OR PLC CONTROL
COMPLIANCE STATUS	**ISO 9001:2015**
COMPLIANCE STATUS	**CE : MACHINERY DIRECTIVE (MD) 2006/42/EC**

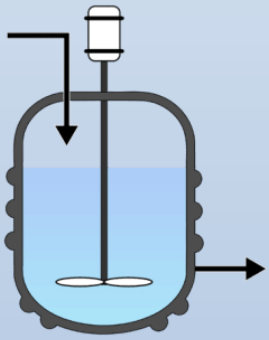
Small and Medium Scale Ultrasonic Biodiesel Reactors

MODEL	Tons/hour	Gallons/hour
MTEK500 x 1	0.25 to 0.5	80 to 160
MTEK1000 x 1	0.5 to 1.0	160 to 320
MTEK1500 x 1	0.75 to 1.5	240 to 480
MTEK2000 x 1	1.0 to 2.0	320 to 640
MTEK1500 x 2	1.5 to 3.0	480 to 960
MTEK2000 x 2	2.0 to 4.0	640 to 1280
MTEK1500 x 4	3.0 to 6.0	960 to 1920
MTEK2000 x 4	4.0 to 8.0	1280 to 2560

Applications

Biodiesel Manufacturing Process

Mixing of Chemical



Chemical Reactor

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CERTIFIED ISO 9001:2015 COMPANY

CE

MACHINARY DIRECTIVE 2006/42/EC