Department of Chemical Engineering, NIT Calicut

MICROWAVE SYNTHESIZER

Photo of Instrument:



Instrument Name	MICROWAVE SYNTHESIZER				
Instrument Model & Serial No.	Monowave 200				
Instrument Make	Anton Paar				
Category of Instrument					
Description of Instrument	A microwave synthesizer is a specialized instrument used in chemistry for the rapid and controlled synthesis of various compounds using microwave radiation. This technology has gained popularity due to its ability to accelerate chemical reactions, reduce reaction times, and improve overall efficiency compared to traditional heating methods.				
Instrument Technical Description and Major Specifications (This Specifications Limited to Major 5)	Microwave Cavity: The core component of a microwave synthesizer is the microwave cavity, where the reaction vessel is placed. This cavity allows the efficient coupling of microwave energy with the reaction mixture. The cavity design can vary, and there are both single-mode and multi-mode instruments.				
	Control Unit: Microwave synthesizers come with a control unit that allows users to set and control various parameters such as temperature, power, and reaction time. This control is essential for ensuring the				

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Reaction Vessels: Specialized reaction vessels designed to withstand microwave conditions are used in these synthesizers. These vessels are typically made of materials that can absorb microwave radiation effectively and are designed to handle the pressure and temperature conditions associated with microwave-assisted reactions. Max. pressure: 30 bar Technique: Microwave Synthesis Max. temperature: 300 degree Celsius Application of Instrument (Limited to Major 4 or 5) Application of Instrument (Limited to Pressure and temperature: 300 degree Celsius Application of Instrument (Limited to Pressure and temperature: 300 degree Celsius Application of Instrument (Limited to Pressure: 30 bar Technique: Microwave Synthesis Max. temperature: 300 degree Celsius Application of Instrument (Limited to Pressure: 300 degree Celsius Application of Instrument (Limited to Pressure: 300 degree Celsius Application of Instrument (Limited to Pressure: 300 degree Celsius Application of Instrument (Limited to Pressure: 300 degree Celsius Organic synthesis Organic synthesis Organic synthesis Organic synthesis Organic molecules, peptides, polymers, and various other compounds Inorganic Compounds Inorganic Compounds Nano-material Synthesis Nano-material Synthesis Nano-material Synthesis Organic Compounds Nano-material Synthesis Prof. Shiny Joseph shiny@nitc.ac.in 04952285404 Technical Staff Name / Email / Contact Muhammed Munaver M		reproducibility of reactions and optimizing			
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Application of Instrument (Limited to Major 4 or 5) Major 4 or 5) Type of Sample Required for Analysis/Testing (Quantity, Pre-Preparation, State etc.) Guidelines for Sample Submission – User Instructions Types of Analysis/Testing (Quantity, Pre-Preparation, State etc.) Guidelines for Sample Submission – User Instructions Faculty In-Charge Name / Email / Contact Max. temperature: 300 degree Celsius • Organic synthesis • Materials science • Nanotechnology. • They can be used for the synthesis of small organic molecules, peptides, polymers, and various other compounds Inorganic Compounds Nano-material Synthesis Microwave Synthesis Prof. Shiny Joseph shiny@nitc.ac.in 04952285404 Technical Staff Name / Email / Contact Muhammed Munaver Muhammed Munaver Muhammedmunaver@nitc.ac.in 04952285484 Location of Instrument Instrumentation Lab		vessels designed to withstand microwave conditions are used in these synthesizers. These vessels are typically made of materials that can absorb microwave radiation effectively and are designed to handle the pressure and temperature conditions associated with microwave-assisted reactions. Max. pressure: 30 bar			
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Location of Instrument Instrumentation Lab		Muhammedmunaver@nitc.ac.in			
		04952285484			
Other Details	Location of Instrument	Instrumentation Lab			
	Other Details				

Department of Chemical Engineering, NIT Calicut

User Charges:

S.NO.	Type of Analysis/Testin g	Internal - within Departmen t of NITC	Internal - Other Department s NITC	External Academic Educational Institutes	National Labs	Industry
1	Microwave Synthesis		500	1000	1000	2000

Slot Booking and Payment Work Flow:

- Discuss the slot availability with the technical staff in the instrumentation lab of chemical engineering department.
- Collect the request form.
- Payment should be at the accounts section of the institute.
- Get the request form signed from the faculty in charge.
- Submit the request form and samples in the instrumentation lab.