



**OFFICE OF THE REGISTRAR :: DIBRUGARH UNIVERSITY :: DIBRUGARH**

No. DU/RG/B.01.07/17/3031

Date:06/12/2018

**Notice Inviting Quotation**

Sealed quotations are invited from reputed firms/authorized dealers for the supply of **Microwave Synthesizer** for the Department of Chemistry, Dibrugarh University as per specification at Annexure-A. The quotations will be received by the undersigned on or before **20.12.2018 upto 11:00 A.M.** and will be opened on the same date at **11:30 A.M.** in the presence of the intending quotationers or their authorized agents.

Sl. No.	Description	Qty.
01	Microwave Synthesizer with integrated Camera Specification at ANNEXURE-A	1 No.

**Terms and Conditions:**

1. No separate quotation paper will be issued from the office. Quotation should be submitted in the Supplier's Letter Pad with supporting documents (like Company Price List, Authorization / Dealership Certificate, Product Catalogue etc.).
2. The University reserves the right to accept or reject any or all the quotations without assigning any reason.
3. Payment will be made only after the successful after receipt of the materials in good condition.
4. The quotation should be addressed to the "**Registrar, Dibrugarh University, Dibrugarh – 786004**" super scribing the Quotation Notice Number on the envelope.
5. **Any kind of Taxes/GST (if any) must be clearly indicated in the quotation.**
6. The tendering firm must have proper PAN/GST No. and the same shall have to be enclosed with the quotations.
7. In the event of any kind of holiday, the quotations shall be opened on the next working day.
8. The quantity mentioned above may be increased or decreased at the time of order as per actual requirement.
9. The tendering firm must clearly indicate the "Make" and "Brand" of each and every item in their quotations.

**Sd/-**

**Registrar**

Dibrugarh University

**Copy to:**

1. Dr. Diganta Sarma, Project Investigator (DBT Twinning Scheme) & Head, Dept. of Chemistry, D.U.
2. The Assistant Registrar (F&A), D.U. for information.
3. Dibrugarh University Website.
4. Notice Boards.
5. Office File.

**Sd/-**

**Registrar**

Dibrugarh University

## ANNEXURE-A

### Technical Specifications of Microwave Reactor for small scale synthesis from mg to gram

Microwave assisted focused monomode organic synthesis system should be able to handle the synthetic reactions involving routine organic, organometallic, Nano Materials synthesis, fluorination, caustic solutions, catalysts using palladium, non-polar solvents like toluene, hexane etc.

- System should have Microwave power output of minimum 800 W or higher
- Maximum Pressure & Temperature should be 30 bar and 300°C or greater for all vessel types (10 mL as well as 30 mL) for scale up reactions without re-optimization of parameters.
- Should be able to effectively heat polar as well as non-polar solvents like Toluene, Dioxane etc. without heating aids.
- Temperature Measurement: IR measurement as standard facility with multi point calibration for accurate temperature measurement of reaction/s.
- Integrated Pressure Sensor to measure, display as well as document reaction pressure.
- Should have inbuilt magnetic stirrer device with variable speed from 0 rpm upto at least 1000 rpm or more to ensure uniform temperature in the reaction mixture volume for uniform heating of even high viscous reactions.
- Self-tuning cavity for optimum heating efficiency with all vessel types
- Should be supplied with Glass Vials of 10 ml and 30 ml capacity with sustainable material of construction and allow for multiple reaction runs to be conducted in the same vial.
- Should be supplied with vessels (20 pcs) made of material like Silicon Carbide of at least 10 ml capacity for carrying out reactions involving metallic particles, in-situ fluorination, caustic solutions of high alkaline pH such as NaOH at elevated temperatures and reactions using other aggressive reactants and can be used for unlimited reactions.
- Sealing of reaction vessels should be easy and without use of any tools.
- Heating Performance benchmarks with glass vessels and without any heating aids :
  - System should have ability to heat 20 mL Ethanol to 200 °C in 2 min
  - System should have ability to heat 5 mL Toluene to 200 °C in less than 5 min
- Large inbuilt Touchscreen display with capability for online graphical display of reaction parameters like pressure, power and temperature and review of previous reaction runs
- Direct printout to PDF files or export of data to excel via USB ports
- Suitable air compressor for operation of the instrument and cooling of reaction vials after a reaction is over should also be quoted.
- System must have an integrated camera for monitoring the reactions with display on the screen of the instrument.
- Consumables: Stir Bars for both 10 mL as well as 30 mL vessels, Caps, Silicone Septum must be quoted in the main offer along with the instrument for trouble free operation.
- The system should be upgradable with an autosampler with minimum 24 reaction vessels handling (10 mL and 30 mL) for unattended operation.

**Sd/-**  
**Registrar**  
Dibrugarh University