

**UNIVERSITY OF JAMMU**  
**SCHOOL OF BIOTECHNOLOGY, UNIVERSITY OF JAMMU-180006**

School of Biotechnology, University of Jammu, Jammu & Kashmir is interested in the purchase of **MICROWAVE DIGESTER SYSTEM** as per specifications given in the Annexure 1. The Department invites sealed bids / tenders bids from reputed Manufacturers or their Authorized Distributors / Dealers for Supply, Installation and Training of **MICROWAVE DIGESTER SYSTEM**. Interested parties may submit their sealed bids online as per Technical Specifications given at Annexure 1 and General Terms & Conditions given at Annexure II. The tender will be published online on <https://jktenders.gov.in>. The TECHNICAL BID and PRICE BID has to be submitted online before the due date i.e. 03<sup>rd</sup> April 2020 Whereas hard copy of the TECHNICAL BID along with EMD has to reach to the office of the Director, School of Biotechnology, University of Jammu, Jammu 180006 before the due date in a sealed envelope (duly superscripted with Tender No. and date).

For any query pertaining to this tender contact Professor Jyoti Vakhlu, School of Biotechnology University of Jammu, Jammu 180006.

The technical bid will be evaluated first and price bid will be opened only in respect of those Vendors, who are found technically qualified after evaluation of Technical Bid. The Technical bid will be opened on 07<sup>th</sup> April 2020 in the School of Biotechnology, University of Jammu, Jammu - 180006

Director  
School of Biotechnology,  
University of Jammu, Jammu - 180006

Ref. No. JU/SBT/2020/2172  
Dated: 05-03-2020

## Annexure-I

Item No	Equipment	Quantity	Technical Specification
1	<b><u>MICROWAVE DIGESTER SYSTEM</u></b>	1	<b><u>THESE ARE THE MINIMUM SPECIFICATIONS, EQUIPMENTS WITH BETTER SPECIFICATIONS WOULD ALSO BE CONSIDERED.</u></b>

**Microwave Digestion System**

Fast Digestion system based on microwave heating for digestion of biomass from diverse sources; Processed samples may be used for further for biomass composition, elemental analysis by AAS, HPLC, ICP – OES or ICP – MS

**Microwave Digestion System** must have following specifications

1. **Microwave Digestion System** should be latest model based on continuous microwave heating technology and should have provision to control temperature and pressure simultaneously inside individual vessel.
2. The digester system must be flexible and should allow digestion of higher sample weight upto 2-3 gms per vessel for inhomogeneous samples and for trace level elemental impurity analysis. Digester can digest different samples in same run.
3. The microwave **Digestion System** should have Single or dual Magnetron system with delivered power of minimum 1000 watt.
4. System should be user friendly, must have inbuilt software program withinbuilt color touch screen. System should be user friendly and must have inbuilt software programs as well as facility to create new user defined programs.
5. The cavity should be made of stainless steel housing with PTFE plasma coating for corrosion resistance. Also all hardware should have protective layer coating for the resistance from acid.
6. System software must automatically adjust the power delivery based upon sample load, number of vessels and pre- programmed control settings without a need for user to define maximum power or re-optimize experimental conditions to accommodate change in number of sample vessels.
7. For protection from back-reflected microwave energy system must be equipped with temperature sensors on the magnetron to prevent overheating.

**Vessel System**

1. Vessels must be fully closed, corrosion resistant of any acid and gases, shouldn't crack or break or explode in case of overpressure development for any unknown sample reactions.
2. Vessel Volume should be minimum 50 mL or more, with minimum filling volume, sample weight upto 3 gm per vessel for inhomogeneous samples and trace level analysis.
3. Max. working Temperature: 250° C or more, Max. Pressure: 40 bar or more
4. Vessel material: Microwave transparent and reagent resistant suitable inert polymeric materials like TFM / PTFE / Fluoro polymer.
5. Should not require any mechanical tool for closure or opening of the vessel, must be possible by hand. Overpressure release mechanism of the vessel must be controlled by means of metal springs for precise opening pressure independent of the reaction temperature or sample weight.

**Rotor**

1. Rotor must accommodate minimum 12 or higher pressure vessels at a time. Rotor should be made of lightweight Aluminum material for high pressure strength upto 150 bar or more and to ensure ultrafast cooling and must be provided with a lid for protection of cavity from acid vapors/fumes.
2. **Microwave Digestion System** should have minimum 12 vessels.

2/22  
9/9/22



3. System must be equipped with an advanced temperature sensor to monitor internal temperature of reaction vessels and display the internal temperature of each reaction vessel.
4. A temperature calibrator for accurate temperature measurement must be supplied along with the instrument with minimum 3 years or more validity
5. Integrated high performance exhaust system for taking out fumes from the cavity. The vessels must be cooled inside the oven from 180 °C to 70 °C within less than 10 minutes.

**Additional Requirement**

1. Power backup: UPS 5KVA with batteries
2. Vendor must have a team of factory trained application personnel to provide user training and application training to the faculty and research students at the time of installation.
3. Warranty: Warranty including maintenance of at least 5 year

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## Annexure-II

### **General terms and conditions**

1. Rates should be F.O.R. Jammu University Campus.
2. In case of foreign manufacturer kindly quote F.O.R Jammu University Campus in foreign currency. Also quote tentative charges for custom Duty, Clearance charges and Transportation and Insurance up to Jammu separately.
3. Goods must conform to our indicated specifications. Detailed technical and other specifications / literature must be enclosed.
4. Indicate concessional rates of tax for educational institutions. The GST rates must be clearly mentioned separately.
5. The submission of the tenders will be online. The Technical Bid and Price bid has to be submitted online on [www.jktenders.gov.in](http://www.jktenders.gov.in). Whereas the hard copy along with EMD has to be submitted offline on or before due date in a sealed envelope.
6. Earnest Money Deposit (EMD) 2% of estimated price to be submitted along with commercial bid. Bids without EMD will be rejected.
7. The warranty of the product should be at least five Year.
8. The rates should be valid for 120 days. Both technical bid and the commercial bid addressed to undersigned and duly sealed /signed and tapped with official stamp should reach this office latest by 03<sup>rd</sup> April 2020.
9. Bidder should submit Purchase orders and / user List as a proof of the dealing with other Government organizations / Institutions. The date of the supply order should be within last Three years from the date of publishing the BID.
10. Bidder should submit Valid Authorization Certificate from OEM for each against this NIT.
11. The firm/bidders should provide non blacklisting certificate mentioning it should not have criminal records/cases/activities.
12. Reports on Financial standing of the bidder such as profit and loss statement, balance sheet and auditor reports for the past three years, banker's certificate etc. should be provided by the bidders.
13. The bidder's firm should be established since last 5 years Documentary Evidence to be submitted along technical BID.
14. The bidder should have enough strength of people for the after sales support with their branch offices near to Jammu/Chandigarh. The details of Service Centre and Office addresses along with Service personnel need to be shared for the verifications.
15. Self-attested copies of GST and PAN card and Firm registration certificates to be submitted.
16. The bidder should have ISO or equivalent quality Certification.
17. The delivery, installation and operational training of the instruments/equipment should be completed within 45 days from placing of the order failing which the bank guaranty shall be retained by the Department.
18. The successful Bidder must provide Bank Guarantee equivalent to 10% of the cost of equipment to the Value of Order from Nationalized or Scheduled bank.
19. All Documents submitted in technical BID should be self-Attested (Signed and Stamped).