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**GeM Bid No. GeM/2022/B/1906752 DT 31.01.2022**

**MICROWAVE DIGESTER**

<b>Sl.No.</b>	<b>Parameter</b>	<b>Tender specifications</b>
<b>1</b>	<b>Application</b>	<p>Petroleum crude oil and its products (naphtha, kerosene, diesel, VGO &amp;VR), Bio Oil, Biological samples, Ore samples and Catalysts.</p> <ul style="list-style-type: none"> <li>• Vendor should demonstrate all these samples satisfactorily after installation of the instrument.</li> <li>• Necessary supportive documents and at least 03- PO copies (last 3 years) should be provided along with bids, where the quoted model is installed and being used in India for the above-mentioned samples.</li> </ul>
<b>2</b>	<b>Basic design of Microwave Oven</b>	<ul style="list-style-type: none"> <li>• Latest technology -benchtop system</li> <li>• Microwave power: 1700 Watts or more with two magnetrons.</li> <li>• Cavity volume: 50 Litre or more to accommodate various accessories.</li> <li>• Integrated cooling and exhaust system for removal of acid fumes.</li> <li>• System must have LCD touch screen or TFT display for all routine operations and system should have built in manuals.</li> <li>• System must be controlled with control panel and that must be supplied with the system.</li> <li>• The system should be explosion proof as a safeguard from any blasts</li> <li>• System must have built-in high-Performance exhaust for cooling and fume removal</li> <li>• The system must be equipped with all safety features needed to prevent over pressurization, temperature shoot up, leakage of microwave radiation, etc. during operation</li> <li>• <b>High Pressure Multimode Rotor system (01):</b> Rotor System must be capable of processing 15 or more high pressure vessels simultaneously.</li> <li>• Vender should quote the rotor in which minimum 15 PTFE-TFM vessels could run simultaneously.</li> <li>• Total number of vessels should be quoted 32 nos. vessels (complete vessels with outer rack, liners, &amp; their caps along with springs etc should be quoted, if incomplete vessels offered than they will be liable to rejection)</li> </ul>
<b>3</b>	<b>Vessel Specifications:</b>	<ul style="list-style-type: none"> <li>• Volume of vessel: 50 ml or more with minimum filling volume of 3 ml or more.</li> <li>• Operating temperature: 250 °C or more for complete digestion of even the most difficult to digest samples in single run.</li> <li>• Max. Vessel design temperature: 300 °C or more</li> <li>• Max. Pressure:100 bar or more</li> <li>• Operation pressure: 40bar and above</li> <li>• If closing with special tools like torque wrench that automatic vessel closing and opening station should be provided or vessels should be simple hand tightening closure.</li> <li>• Internal temperature of every vessel must be displayed digitally as well as graphically on the screen for each vessel</li> <li>• The reaction vessels must have controlled release of overpressure with metal springs/high quality polymers or better, temperature to avoid explosions in case</li> </ul>

		<p>of any sudden exothermic reactions over entire temperature range.</p> <ul style="list-style-type: none"> <li>Material of construction of vessels: Vessels should be made of TFM for high strength under high pressure.</li> </ul>
4	<b>Other Accessories</b>	<ul style="list-style-type: none"> <li>Suitable branded PC with latest configuration of Window 10/11, i7, 1 TB Hard Disc, 16 GB RAM, 28" HD LED monitor. Licensed OS and related software's. Software backup in CD should be provided. MS office latest version with license key-01. Application software should be provided with license.</li> </ul>
4	<b>Safety Features</b>	<ul style="list-style-type: none"> <li>System must have (magnetically) resealing safety door for safe release of overpressure.</li> <li>Must have software safeguards for rotor identification and over-pressure settings.</li> <li>Must have adequate protection for magnetron protection from reflected energy.</li> </ul>
7	<b>References</b>	<p>Vendor has to give at least 3 references in India where the quoted system is working satisfactorily for the quoted model for above mentioned applications. Vendor must enclose minimum 3- purchase order copies of reputed Govt Institutes/firms. The quoted model must be available on manufacturer's website. All documents should be attached along with bids to qualify the bids.</p>
8	<b>Installation</b>	<p>Installation and commissioning should be at free of cost at CSIR-IIP, Dehradun. The institution will provide only the space for installation. Manufacturer must provide all the pre-installation requirements for installation and commissioning well in advance.</p>
9	<b>Warranty</b>	<p>Three years of comprehensive warranty from the date of installation on the complete system, including all the subsystems. In case of breakdown during the warranty period, a competent service engineer of the supplier should make as many visits as necessary to rectify the problem and replace the faulty parts. But it should be repaired/ contacted within 72 working hours from the date and time of complaint lodged by the user.</p>
10	<b>Application Training</b>	<ul style="list-style-type: none"> <li>Onsite training to personnel for smooth operation of the instruments. Training should be divided in two parts. One at the time of installation and commissioning for one week time. Then training after three months of successfully functional of instrument for one week time period.</li> <li>Spares: The supplier of the instrument must confirm in writing that the spares for the entire instrument will be available for a period of at least ten years after the installation of the instrument.</li> </ul>