भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली

शिक्षा मंत्रालय, भारत सरकार द्वारा स्थापित

सैक्टर81 , नॉलेज सिटी, प॰ ओ॰ मनोली, एस॰ ए॰ एस॰ नगर, मोहाली, पंजाब - 140306

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH MOHALI

(Estd. By Ministry of Education, Govt of India)

Sector-81, Knowledge city, PO-Manauli, SAS Nagar Mohali-140306, Punjab

PAN No. - AAAAI1781K GST No. 03AAAAI1781K2ZS

• **Phone : +91-172-2240086 & 2240121** • **Fax : +91-172-2240124, 2240266** • **http://www.iisermohali.ac.in** • **Email:** stores@iisermohali.ac.in

Cppp/Institute Website

IISERM (1407)20/21-Pur Dated: 12th November 2020

NOTICE INVITING E-TENDER

Online tenders are invited on behalf of Director, IISER Mohali in **TWO BID SYSTEM** for the **Supply and installation of Droplet Generation and Monitoring System with accessories** as per technical specification and details given below and BOQ list from the original manufacturer/supplier at CPPP i. e. **https://eprocure.gov.in/eprocure/app**. Tender documents may please be downloaded from the E-procurement portal website **https://eprocure.gov.in/eprocure/app**& Institute website **www.iisermohali.ac.in.**

-sd-
(Mukesh Kumar)
Assistant Registrar (P&S)

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E-TENDER NOTICE

Tender Ref.- IISERM(1407)20/21-Pur	Dated :- 12th November 2020

Critical Date Sections

Sr.	Description	Date	Time
1.	Tender Publishing Date and time	12th Nov 2020	6:00pm
2.	Tender Document download start Date & Time	12th Nov 2020	6:00pm
3.	Bid Submission start Date &Time	12th Nov 2020	6:00pm
4.	Bid Submission End date and Time	14th Dec 2020	Upto 11:00am
5.	Tender opening Date and Time	15th Dec 2020	At 11:30am

Online tenders are invited on behalf of the Director, IISER Mohali in **TWO BID SYSTEM** for following item(s) from the original manufacturer/supplier at CPPP i.e. **https://eprocure.gov.in/eprocure/app**. Tender documents may please be downloaded from the E-procurement portal website **https://eprocure.gov.in/eprocure/app** & Institute website **www.iisermohali.ac.in.**Tender fee in shape of DD/Banker Cheque of Rs 590/- (Non-refundable) and EMD of Rs. 40,000/- should be submitted by DD /Banker Cheque/FDR/ Bank Guarantee in favour of the Registrar, IISER Mohali payable at Mohali or through Online mode in Institute Account (Canara Bank Saving Account Number 4790101001912 and IFSC Code CNRB0004790). However, scanned copy of the both tender fee and EMD should be upload on website along with technical bid part. The hard copy of the same in original to be send to the address mentioned below duly superscribing the supply/work name and reference/ tender ID on the envelope and same must reach before opening the bid and if not received within due date the bid will be rejected summarily.

The Original EMD and Tender Fee should be sent to:

Assistant Registrar (P&S)
Indian Institute of Science Education and Research Mohali
Sector-81, Knowledge City, SAS Nagar, Mohali, Punjab,
India, Pin: 140306

Non-receipt of original EMD and Tender Fee will lead to rejection of tender.

Item Details

Sr.	Description	Qty. (in units)
1.	**Supply and installation of Droplet Generation and Monitoring System with accessories** **Technical Specifications:** Minimum requirements from the system are indicated below. Improved features can be considered with regard to the specifications indicated as (or better). 1) 2 channel Pressure Controller for both phases 2) 2 Flow Sensor for both phases 3) Base controller with connectivity to control computer through USB interface and controls two TTL signals 4) Digital High-Speed Microscope with Computer Interface 5) Monochrome camera 2592x2048 (5.3 MP) up to 7092 fps (or better) 6) Calculate frequencies of droplet generation and the encapsulation rate with imaging post-treatment 7) LED, camera, lens (X5) and zoom (X6.5) (or better) 8) Maximum feld of view (maximum zoom) 0.5 mm * 0.4 mm (or better) 9) Minimum feld of view (minimum zoom) 3.5 mm * 2.8 mm 10) Objective lens magnifcation 5X (or better) 11) Zoom ratio 6.5X (or better) 12) Working distance 34 mm (or better) 13) Number of pixels per micron at max zoom 2.56 pixel/micron (0.39 micron/pixel) (or better) 14) LED Luminous Flux 145 lumens (or better) 15) LED color temperature 6500K 16) Imaging device 5.3 Megapixel monochrome camera (or better) 17) Sensor ON Semi Vita 5000 18) Resolution 2592 x 2048 pixels (or better) 19) Frame rate 76 fps at max resolution/7092 fps at min resolution (or better) 20) Video image file type .avi **(I) Chip** a) Drop chip should allow an easy and fast set up time (<1min) with no leaking or complex connectors b) The chip includes size markers at the nozzle for easy live droplet size estimation c) Chip should be flexible to experiment a large scale of droplet formation frequencies (up to 1200Hz and sizes (20-100µm diameter) d) Highly mono-dispersed droplets (C.V < 2%) e) Water in oil droplets f) Surface coating free g) Fluidic resistance integrated to avoid back flows h) Up to 4000hz production: 240 000 droplets in 1 min (or better) i) Droplet Characteristics From 15µm to 100µm diameter droplet size j) Operating pressure 0-2bar k) Burst pressure 5 bar **(II) Compact and Silent Compressor** a) Output pressure: from 0.1 bar to 2.30 bars b) Output capacity: 2.3 bar c) Should drive Multi Pressure Controller d) Voltage:24V DC e) Current:1.5A f) Working environment: Indoor clean environment g) 15 - 25 °C h) RH < 65% (no condensation)	**01**

(III) Surfactant and Oil

a) Surfactant should be highly reliable droplet formation and production from 20µm to 100µm
b) diameter. Compatible with chip
c) 2% in 3M™ Novec™ 7500 oil
d) Should offers a low drop-to-drop transfer of organic compounds, while maintaining high gas solubility and permeability

(IV) Pressure Controller

a) Should regulate the externally supplied (inlet)1 pressure to a user defined pressure with high precision and the regulated (outlet) pressure pressurizes the reservoir, driving the liquid up through the tubing and into your microfluidic set-up.
b) Controller should facilitate the controlling of outlet pressure to control the rate of fluid injected into your microfluidic set-up.
c) Should have Integrated Display with Inlet Pressure and Target Pressure
d) Should warn, if the pressure is out of range
e) Facilitate to Calibrate for different Solutions
f) Should work with or Without PC with integrated display to monitor Pressure , Flow and respective variable parameter
g) Customisable control system by adding or re-arranging modules to meet different microfluidic flow experimental designs
h) Easily expandable channel capability for future needs
i) Plug and play expandability
j) Positive maximum pressure 2 bar (or better)
k) Low pressure ranges 25mBar and 69mbar (high precision) (or better)
l) Resolution 0.03% of full range scale (or better)

(V) Flow Unit

a) Bidirectional flow sensor interfaced with software
b) High precision flow-rate monitoring
c) Broad range of flow-sensors (70 nl/min to 5 ml/min); 5 ranges with accuracy of 5% on the measured values (or better)
d) Dual-Calibration (water and alcohol).
e) One range calibrated for oils.
f) Maximum Pressure 200 bar (or better)
g) Wetted materials PEEK & Quartz Glass
h) Calibrated Media for both Water and IPA
i) Range for Water 0±7µL/min and For IPA 0±70µL/min (or better)
j) Accuracy for Water 5% m.v.above 0.42 µL/min for IPA 20% m.v.above 4.2 µL/min (or better)
k) Repeatability for Water0.5% m.v.above 0.7 µL/min for IPA 1% m.v.above 0.7 µL/min (or better)

(VI) Droplet Kit

a) Easy and friendly to use the EZ Drop chip
b) Up to 4000 Hz (out of the Droplet Starter Pack)
c) From 20 to 100µm droplets
d) No complex connectors
e) 20µm, 50µm and 100µm markers on the PDMS Droplet Chip
f) Microscope slide dimensions
g) Quality monitoring with a QR code
h) Highly mono-dispersed droplets (C.V < 2%)
i) Water in oil droplets: adapted for bio-encapsulation.
j) Markers on the PDMS for EZ connection and droplet
k) size visualization
l) Surface coating free
m) Ultra-fast set-up: less than 1min
n) Fluidic resistance integrated to avoid back flows
o) Up to 4000hz production: 240 000 droplets in 1 min (or better)
p) PC connection USB 3.0

	(VII) Microfluidics Software a) Model based design and development – Easy drag and drop Software for developing and running time-based experiments. b) To easily create protocols for completely automated experiments. c) Suitable for designing short time and long duration experiment protocols d) Datalogging and command execution feature e) Advanced graphic features : adjustable scale, absolute or relative values, channel display selection,Export directly to Excel f) Should Support functions Like (Wait , If , Elseif , Loop , SineWave , SquareWave , RampWave Etc) g) Real-time control and Monitor of pressures and flow rate graphs h) Enter Input Value support numerically or by using slider i) Software Development Kit (SDK) Support for MATLAB and LabVIEW **(VII) Optional Items (to be quoted separately)** a) 10x and 20x objectives compatible with the Digital High-Speed Microscope b) Droplet kit	

A) <u>IMORTANT NOTES:-</u>

I. **<u>The online updated Price BOQ is in INR format. If bidder want to quote other than INR please specify the quoted currency in the technical bid/part and fill the amount in same updated BOQ.</u>**

II. **<u>Please bifurcate the price on shipping terms i.e. Ex-works -> FCA/FOB -> CIP/CIF in price BOQ and specify the same in technical bid without price.</u>**

III. **<u>If quoted in foreign currency, kindly clearly specify the terms of delivery/country of origin/bank details with swift code/weight/size/dimension of shipment.</u>**

IV. **<u>The Online bids should be submitted directly by the original manufacturer/supplier. If quotation is submitted/filled by any representative/agent/dealer then they must upload a authority certificate from the principal company.</u>**

V. **<u>Kindly specify the weight of the product including weight of packing for assessment of Freight charges, if quoted in foreign currency. Also mention in Technical Bid/Compliance sheet the currency in which quoted.</u>**

VI. **<u>Kindly do not quote end of life model. Spares should be available minimum period of 5 years for quoted models.</u>**

VII. **<u>All MSME/NSIC/Startup Units shall be considered as per provisions/rules prescribed by Govt of India.</u>**

VIII. **<u>WARRANTY: MIN ONE YEAR, IF NOT SPECIFIED ABOVE.</u>**

IX. **<u>Auto-extension of last date has been activated by CPP Portal for the tenders which has participation less than 2 bids.</u>**

B) <u>SUBMISSION OF TENDER</u>

I. All bid/ tender documents are to be uploaded online at Central Public Procurement portal i.e. **<u>https://eprocure.gov.in/eprocure/app</u>** only and in the designated cover/ part on the website against tender ID. Tenders/ bids shall be accepted only through online mode and no manual submission of the same shall be entertained except tender fee and EMD. Late tenders will not be accepted.

II. The online bids shall be opened at the office of the Assistant Registrar (P&S), IISER Mohali, on above given date and time. If the tender opening date happens to be on a holiday or non-working day due to any other valid reason, the tender opening process will be attended on the next working day at same time and place. IISER Mohali will not be responsible for any error like missing of schedule data while downloading by the Bidder.

III. The bidder shall upload the tender documents duly filled in and stamped by the authorized signatory on each and every page. Tender not submitted/uploaded in the prescribed form and as per the tender terms and conditions shall be liable for rejection.

IV. The bidder shall upload scanned copy of the PAN Card, GST number duly signed and stamped. **Also bidders applying against 'MSME/NSIC Certificate" issued by appropriate Authority, should ensure that the certificate attached is relevant to the area of service/supply. For example, If the tender is for "supply & installation of Desktop"** ***the certificate should be issued for activity/area of "Computer supply and services activities etc" otherwise bid will be REJECTED without notice.***

V. E-procurement system ensures locking on the scheduled date and time. The system will not accept any bid after the scheduled date and time of submission of bid.

C) INSTRUCTIONS

1. The Online bids should be submitted directly by the original manufacturer/supplier, If quotation is submitted/filled by any representative/agent/dealer then they must upload a authority certificate from the principal company for quoting the price otherwise such quotation will be rejected.

2. The quantity mentioned in this inquiry is and shall be deemed to be only approximate and will not in any manner be binding on the Institute. Before the deadline for submission of the online bid, IISER Mohali reserves the right to modify the tender document terms and conditions. Such amendment/modification will be notified on website against said tender ID.

3. The rates offered should be FOR Chandigarh/Mohali in case of firms situated outside Chandigarh/Mohali, and free delivery at the Institute premises in case of local firms. Supplier from outside India should mention the Ex-works/FOB/FCA/CIF/CIP price clearly. Conditional tenders will be summarily rejected.

4. In case of Ex-godown terms the amount of packaging forwarding freight etc. should clearly be indicated by percentage or lump sum amount. Institute has policy not to make any advance payments towards any purchase, Letter of credit can be opened if required.

5. THE INSTITUTE IS EXEMPTED FROM CUSTOM DUTY under notification no- TU/V/RG/-CDE(1062)/201 CUSTOM DT.30.08.2016.

6. Tax: This Institute is not exempted from the payment of GST. The current rate (i.e. percentage of GST should be clearly indicated included or excluded) wherever chargeable. Please also provide/upload the copy of PAN card, GST number duly self-attested.

7. Concessional GST is applicable for all the items purchased for Research labs vide Ministry of Finance, notification no. 45/22017 dated 14.11.2017 and 47/2017 dated 14.11.2017.

8. Bidder/s quoting in currency other than **Indian Rupee (INR**) should explicitly mention the currency in which tender quoted wherever applicable in Technical Bid along the tender documents.

9. The delivery period should be specifically stated. Earlier delivery will be preferred.

10. The firms are requested to provide/upload detailed description and specifications together with the detailed drawings, printed leaflets and literature of the article quoted. The name of the manufactures and country of manufacture should also invariably be stated. In the absence of these particulars, the quotation is liable for rejection.

11. Validity of offer: 90 days. The warranty period after satisfactory installation should be mentioned and firm should replace all manufacturing defect parts/ whole item under warranty without any extra cost including clearance, freight, taxes. Security deposit/ Bank Performance Guarantee @ 10 % of the value of supply order as per norms may be sought from the firms.

12. The right to reject all or any of the quotation and to split up the requirements for itemized L-1 or relax any or all the above conditions without assigning any reason is reserved by the IISER Mohali. For any corrigendum and addendum please be checked the website https://eprocure.gov.in/eprocure/app and http:/www.iisermohali.ac.in

13. Disputes, if any, shall be subject to jurisdiction in the court of Mohali only.

–sd-
(Mukesh Kumar)
Assistant Registrar (P&S)