



ATAL INCUBATION CENTRE
JYOTHY INSTITUTE OF
TECHNOLOGY FOUNDATION
(Supported by Atal Innovation Mission, NITI Aayog, Govt. Of India)

Atal Incubation Centre -Jyothy Institute of Technology Foundation (AIC-JITF)

Call for Quotation

(For the supply, installation of Fabrication Lab Equipments & Training Sessions at AIC-JITF)

(Reference Number : Proc/AIC-JITF/2021/001)

www.aicjitf.org

Proc/AIC-JITF/2021/001

Dated: 01-10-2021

Call for Quotation

1. Call for Quotation for the supply, installation of Fabrication Lab equipments and Training

Sessions:

- i. Quotation is invited by Atal Incubation Centre-Jyothy Institute of Technology Foundation (AIC-JITF) upto the specified closing date & time from all intending suppliers(s) for the supply, and installation of fabrication lab equipments.
- ii. The quotations should be in a sealed cover super scribed as: **“Quotation for the supply, installation of Lab Equipments AIC-JITF”**. Technical and financial bids must be sent in separate sealed covers duly super scribed as Technical bid and Financial bid.
- iii. The Technical specifications of the materials are furnished in **Annexure – I**
- iv. All the quotations shall be sent to:

**The Director
AIC-Jyothy Institute of Technology Foundation
Jyothy Institute of Technology Campus
Off Kanakapura Main Road Thataguni,
Bengaluru, Karnataka 560082**

The quotation should reach this office on or before 22-10-2021 by 3.00 PM.

For further details visit www.aicjitf.org

**Director
AIC-JITF**



Terms and Conditions

01. The rate quoted should be preferably inclusive of all taxes / duties, otherwise the amount of taxes / duties should be mentioned separately, duly specifying the nature of tax / duty with the rate there of.
02. The technical and financial bids should be quoted separately. (See **Annexure I** for the list of equipments and technical specifications).
03. Applicant should not have been blacklisted by the Departments/Ministries of the Govt. of India/State Govt./PSUs/any other organization (A self-declaration has to be submitted).
04. The tenderer/bidder should submit duly filled checklist of technical bid (**Annexure II**) along with supporting documents.
05. The financial bids of only those bidders will be considered who qualify under technical bid. The date of opening the financial bids of qualified technical bidders will be informed separately.
06. The supply should be for: AIC-Jyothy Institute of Technology Foundation, Jyothy Institute of Technology Campus Off Kanakapura Main Road Thataguni, Bengaluru, Karnataka 560082
07. The despatch documents and bill should be forwarded directly to this organization and not through Bank.
08. The prices quoted must include CIF (Cost, Insurance and Freight) charges. The Bidder is responsible for the safe delivered of the stores at our organization. No Insurance Charges will be payable by this organization. Under no circumstances should the items be sent under freight to pay.
09. The prices quoted (Total Value) must be inclusive of all taxes, training/equipment installation, qualification and demonstration, loading and unloading, transport insurance (wherever applicable), transportation charges to deliver the equipment/machine & training sessions at AIC-Jyothy Institute of Technology Foundation, Jyothy Institute of Technology Campus Off Kanakapura Main Road Thataguni, Bengaluru, Karnataka 560082
10. All communication should be addressed to: The Director by designation and not by name.
11. Payment will be made by cheque only. The payment schedule will be decided after mutual discussion with the selected successful supplier.

12. Goods not received in good condition and not according to specifications will be outrightly rejected.
13. Manufacturer's name and brand etc. should be mentioned in the bill.
14. Delivery period should be mentioned.
15. The supplier has to ensure Guarantee and Warranty for all the equipments and goods with service period of at least 3 Years from the date of supply, with no financial implications to AIC-JITF during the service period
16. Quotation received after the due date is liable to be rejected / not considered.

Paper Cost and EMD

The bidder shall furnish **INR 1000** (One thousand only) as bid processing (Tender) fee and as part of the bid, an interest free EARNEST MONEY DEPOSIT (EMD) of amount **INR 5000** (Five Thousand only) in the form of Demand draft /Account payee cheque at par (valid for 90 days) drawn in favour of AIC-Jyothy Institute of Technology Foundation, Jyothy Institute of Technology Campus Off Kanakapura Main Road Thataguni, Bengaluru, Karnataka 560082, payable at Bangalore or through RTGS or NEFT transfer as per details provided below

The EMD of the unsuccessful bidders will be discharged/returned at the earliest after completion of the tender process. The successful bidder's EMD will be discharged upon the bidder's acceptance of the Letter of Intent satisfactorily. The EMD may be forfeited under following circumstances:

- If the bidder withdraws his/her bid during the period of bid validity specified by the bidder in the Bid form;
- In the case of successful bidder, if the bidder fails to sign the contract; or Fails or refuses to honour his/her own quoted price for any of the items or part thereof.
- In both the above cases bidder will not be eligible to participate in the tender for one year from the date of issue of Letter of Intent.

Cheque/DD should be prepared in favour of: **AIC-JIT Foundation (PAN No. _____)**

OR

RTGS/NEFT (Bank details):

Company Name: **AIC- Jyothy Institute Of Technology Foundation**

Bank:

A/c No.:

IFSCode:

// BY ORDER //

Technical Specification

Sl. no	Equipment Description	Required for	Technical Specification	Unit
1	-80°C Freezer	Preserve and store food products, blood samples, medicines, injections, vaccines, and chemicals for longer period of time.	<p>Upright Freezers (Temperature Range: -50°C to -86°C) General Purpose 368 L</p> <p>Product Overview:</p> <p>Rugged construction for everyday use.</p> <ul style="list-style-type: none"> • Heavy gauge, cold-rolled steel cabinets with a powder coat finish for a uniform exterior that resists chipping and rust • 5" (12.7 cm) foamed-in-place, polyurethane insulation • State-of-the-art refrigeration system improves temperature control, and increases reserve capacity • Two 1" (2.5 cm) access ports enable use of inexpedient probes • Vacuum relief port permits easy access after door openings • Easy-to-remove washable filter provides protection from dust on the condenser, increasing refrigeration performance • Four inner doors reduce cold air loss and improve temperature recovery after door openings • Centralized information center • Microprocessor control and monitoring system ensure that all controls and displays are easy to reach and read • Power management system with low voltage surge protection and buck/boost • Optional choice of CO₂ or LN₂ safety back-up systems for additional sample protection in the event of a power or mechanical failure <p>Specifications :</p> <ul style="list-style-type: none"> • Capacity: 368 L with 2" cryoboxes 240 nos • Certification: CFDA/CE • Electrical: 230V/50Hz • Shelf Weight: 58 Kg • Interior Dimension HxWxD cm :130.8x58.7x49.3 • Exterior Dimension HxWxD cm :197.9x91.2x83.6 <p>SMS Alert for 5 mobile numbers</p>	1 Nos.
2	CO₂ Incubator	To maintain an optimal environment for in-vitro cell culture. Grow and maintain cell cultures for Tissue engineering, in vitro fertilization, neuroscience, cancer research, mammalian cell research routine <i>applications</i> such as cell cultivation or for specific protocols such as IVF and stem cell <i>applications</i>	<ul style="list-style-type: none"> • Capacity 5.3 cu. ft. • Description :150incubator • Capacity (Metric) 150 L • Chamber Material- Electropolished Stainless Steel • Dimensions- (D x W x H) Interior 20.9 x 18.5 x 23.9 in. (53 x 47 x 60.7 cm) • Dimensions (L x W x H) 30.8 x 25.1 x 24.1 in. (78.2 x 63.7 x 86.7 cm) • Temperature Range (Metric)- Ambient +3°C to 55°C • Relative Humidity - <90% at 37°C • Material - Stainless Steel • Electrical Requirements - 230 V, 50/60 Hz • Humidity Source- Integrated water reservoir • Voltage- 230 V • Weight - 154 lb. • CO₂ Sensor Technology - TC Sensor • Lighting- LED • O₂ Concentration Range- Optional 1 to 21% or 5 to 90% • Type -CO₂ Incubator • Oxygen Control-Optional 1 to 21% or 5 to 90% • CO₂ Concentration Range- 0 to 20% • 3 Gas tight inner Doors 	

3	Centrifuge	RNA,DNA and protein isolation, separation of macromolecules from other cellular debris, nanoparticlesolution preparation, separation of serum and plasma from whole blood	<ul style="list-style-type: none"> • Ergonomic design, standard high contrast user interface for up to 6 saved programs with simple push-button operation for routine applications. • With capacity up to 1.6L, including 76x5/7 ml blood tubes and 16x50 ml conical tubes, Auto Lock for fast rotor exchange and 12 available rotors to choose from. <ul style="list-style-type: none"> • Accel/Decel Profiles-yes (9 accel/10 decel) • Dimensions (HWD)Inches: 14.2 x24.6x26 , Centimeters: 36.2x62.5x66 • Drive System-Direct, Brushless induction low profile motor • Program Storage- Up to 6 programs • Capacity-4 x 400 mL with TX-400 rotor • Product Line-General purpose centrifuge • Type-Refrigerated • Max. RCF-25830 xg with Microliter 30 x 2 rotor • Max. Speed-15200 rpm with Microliter 30 x 2 rotor • Voltage-208/230 V • Display-LED type • Memory-Stores up to 6 programs • Motor Type-Direct, brushless low profile motor • Safety Features SMART Spin Imbalance detection, finger-pinch prevention, crash-proof construction 	
4	RT-PCR	Detection of expressed genes, examination of transcript variants, and generation of cDNA templates for cloning and sequencing. Cancer detection, gene insertion, SNP validation, counting bacterial, fungal or viral loads, genetic disease diagnosis.	<ul style="list-style-type: none"> • Detection of up to 5 targets per well, plus a channel dedicated to singleplex FRET Protocol autowriter that generates an optimal protocol for your reaction components • Thermal gradient feature that identifies optimal annealing temperature in a single run The CFX96 Touch Real-Time PCR Detection System has six independently controlled thermal electric units providing even, precisely controlled temperatures at all times during the run, including ramping. • The reduced mass of the honeycomb block provides fast ramping and reduced settling time (time to achieve thermal uniformity). • The optical system, with six filtered LEDs and six filtered photodiodes, collects data from all wells, detecting up to five targets per well. • For single-color FAM and SYBR® Green I, the fast scan option reads single-channel fluorescence in all 96 wells in just 3 seconds. • A channel with an LED filter– photodiode combination is dedicated to FRET singleplex experiments. • Specifications Thermal Cycler Chassis C1000 Touch™ Maximum ramp rate, °C/sec 5 Average ramp rate, °C/sec 3.3 Heating and cooling method Peltier Lid, °C Heats up to 105 Temperature Range, °C 0–100 Accuracy, °C ±0.2 of programmed target at 90°C Uniformity, °C ±0.4 well-to-well within 10 sec of arrival at 90°C Gradient Operational range, °C 30–100 Programmable span, °C 1–24 Optical Detection Excitation 6 filtered LEDs Detection 6 filtered photodiodes • Range of excitation/emission wavRange of excitation/emission wavelengths, nm 450–730 Sensitivity • Detects 1 copy of target sequence in human genomic DNA Dynamic range 10 orders of magnitude • Scan Time All channels, sec 12 FAM/SYBR® Green only, sec 3 • Software Operating systems Windows 7, Windows 8, Windows 10 • Multiplex analysis Up to 5 targets per well System • Licensed for real-time PCR- Yes • Sample capacity, wells 96 Sample size, µl 1–50 (10–25 recommended) • Communication interface USB 2.0 • Dimensions (W x D x H), cm/in 33 x 46 x 36 /13 x 18 x 14 • Weight, kg/lb 21/47 	

5	Multimode Reader	Detect absorbance, luminescence, fluorescence, time resolved fluorescence (TRF), fluorescence polarization assays. Perfect for assays such as ELISA, protein and nucleic acid quantification, and enzyme activity.	<ul style="list-style-type: none"> • Detection modes: Fluorescence, time-resolved fluorescence (secondary mode), luminescence, UV-Visible absorbance, Alpha • Read methods: End point, kinetic, spectral scanning, well-area scanning • Microplate types: 6- to 384-well plates • Other labware supported: PCR plates, Petri and cell culture dishes, Take3 Micro-Volume Plates • Temperature control: 4-Zone™ incubation to 50 °C; ±0.2 °C at 37 °C • Shaking: Linear, orbital • Software: Gen5™ Microplate Reader and Imager Software • Automation: Compatible with BioStack™ and 3rd party automation <p>Absorbance</p> <ul style="list-style-type: none"> • Light source: Xenon flash lamp • Detector: Photodiode • Wavelength selection: Monochromator • Wavelength range: 200 – 999 nm, 1 nm increments • Monochromator bandwidth: 2.4 nm • Dynamic range: 0 – 4.0 OD • Resolution: 0.0001 OD • Pathlength correction: Yes • Monochromator wavelength accuracy: ±2 nm • Monochromator wavelength repeatability: ±0.2 nm • OD linearity: <1% from 0 to 3.0 OD • OD repeatability: <0.5% at 2.0 OD <p>Fluorescence Intensity</p> <ul style="list-style-type: none"> • Sensitivity: Top and Bottom: Fluorescein 5 pM (1 fmol/well, 96-well plate) • Light source: Tungsten halogen • Xenon flash (option) • Wavelength selection: Filters • Wavelength range: 300 – 700 nm (200 – 850 nm option) • Dynamic range: >6 decades • Detector: PMT <p>Luminescence</p> <ul style="list-style-type: none"> • Sensitivity: 10 amol ATP (flash) – Lum. and Abs./Lum. configurations • 30 amol ATP (flash) – Multi-mode configurations • Wavelength range: 300 – 700 nm • Dynamic range: >6 decades • Detection system: Low noise PMT <p>Time-Resolved Fluorescence</p> <ul style="list-style-type: none"> • Light source: Xenon flash • Wavelength selection: Monochromator <p>Alpha Detection</p> <ul style="list-style-type: none"> • Light source: Tungsten halogen • Sensitivity: 300 amol of biotinylated LCK-P peptide • Read speed: 2 minutes (96-well plate) <p>Reagent Injectors</p> <ul style="list-style-type: none"> • Number: 2 syringe pumps • Dispense volume: 5 – 1000 µL in 1 µL increments • Minimum prime volume: 1.1 mL, 100 µL with back flush <p>Physical Characteristics</p> <ul style="list-style-type: none"> • Connectivity: 1 USB, 1 RS232 for external PC control • Power: 100 – 240 Volts AC. 50/60 Hz • Dimensions: 16" W x 15" D x 10" H (40.6 x 38 x 25.4 cm) • Weight: 40 lbs (18 kg)
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6	ELISA reader and washer	Absorbance based detection system to measure viral contamination in blood, presence of disease specific antibodies in blood, screening of viral and bacterial Infections, detection of microbial markers in serum, detection of virus in clinical samples and measuring hormone levels. Measure and interpret ELISA test results by controlled washing of samples by washer, measure antibody tests, quantitation of nucleic acids, HIV detection.	<ul style="list-style-type: none"> • Wash Head: 8 and 12 head manifold compatible • Wash Mode: Row and Plate Wash • Row: 1-12 rows Flat Bottom Plate • Type: 96 or 48 well plate or strip (Flat, U & V - bottom) • Programs: 50 Moving Cycle: up to 12 cycles • Dispensing Volume: 50 - 3000µl in 50µl increments • Dispensing Precision: less than 2% at 350µl • Prime Volume: 50 - 1000µl • Aspiration Pressure: <ul style="list-style-type: none"> • Automatic Soak Time: 0 – 24 Hrs • Residual Volume: less than or equal to 2µl for V/ U bottom plates, and less than or equal to 3µl for per well Flat bottom plates <ul style="list-style-type: none"> • Nos. of Bottles: 2 wash, 1 Rinse/DI, 1 waste with level sensor, 2L each • User Interface: 5 Inch LCD (90 x 53 mm), with Keypad • Bottle Capacity: greater than 2 L Operating Environment • Power Supply: AC 220 V/ 110 V, 50/60 Hz Input Power : less than 80VA • Operating Temperature: 10°C - 30°C • Relative Humidity: Up to 95% relative humidity without condensation • Storage Temperature: -10°C - 40°C • Weight: 9.5 Kg • Dimension: 710 mm x 530 mm x 380 mm 	
7	Rotary shaker with Incubator	Proper agitation and optimal conditions for incubation of samples. Used for Cell culture, fermentation, hybridization, hybridization, biochemistry, growth and incubation of microbial cultures, tissue cultures.	<ul style="list-style-type: none"> • Orbital Speed : 30-250 rpm Speed Controller • Digital Platform Size : 400 mm x 360 mm • Tray : Universal Tray with springs • Temperature Range : above ambient to 60° (Checked at 28°C.) • Controller : Digital PID Controller Accuracy : ± 0.5°C • Circulation: Forced air circulation for uniform Temperature • Body : MS with powder coated. • Inner Chamber Dimension : 430 mm x 450 mm x 550 mm • Input Voltage : 230V, 50Hz. A.C. Suppl 	
8	Protein purification system	Required for purification of Antibody/Protein in the lab scale, as purified protein is required for health care use.	<ul style="list-style-type: none"> • 100 ml/min pumps, • multi-wavelength (UV/Vis) and conductivity detection • automated sample injection, for the purification of proteins • BioFrac Fraction Collector 100/240 V, fraction collector, includes power cord, rack set F1 (2 x flatpack, 13 mm), BioFrac Diverter Valve, • Fittings kit • Small-Volume Sample Loop Kit Pkg of 1, sample loop kit, includes 100, 250, and 500 µl PEEK loops • Large-Volume Sample Loop Kit Pkg of 1, sample loop kit, includes 1, 2, and 5 ml PEEK loops • 1/16" OD (1.6 mm) Post-Pump Fittings Pkg of 10, post-pump fittings, includes Delrin nut, ferrules, lock ring, for use with BioLogicDuoFlow systems • PEEK Tubing Pkg of 1, 1/16" OD x 0.030" ID x 30', high-pressure tubing, rated to 3,000 psi, green • Bottle Cap Kit Fittings kit, includes 2 bottle caps, 2 plugs, 	
9	Autoclave	Sterilize media, instruments, lab ware, and equipment by killing microorganisms and spores, decontaminate certain biological waste	<ul style="list-style-type: none"> • Type of Product: Vertical autoclave • Sub Type: Double Wall • Chamber Size: 450 x 600 • Load: 5 kw • Material: Stainless Steel • Features: Temperature Settable. 	

			<ul style="list-style-type: none"> • Sterilizing time settable. • Automatic Purging Of Stale • Capacity (Litres): 98 Ltr. 	
10	Viscometer	Determining the viscosity of solutions and mixtures. Necessary to know the flowability of solutions used for preparing films for food packaging, nanoinks, determining the molecular weight of polymers etc.	<ul style="list-style-type: none"> • Features include a 5color display to guide users through testcreation and data gathering for fast and easyviscosity measurements. • This also offerspowerful new programming capabilities andresults analysis includingdata averaging andQC limits with alarms. • User instructions withmulti-step test protocols can be created using the new Program • Generator Software anduploaded to the DV2T through a USB FlashDrive (both included with instrument). • TestData can be recorded directly on a local printeror sent to a PC. 	
11	Bio Safety Cabin – Level 2 BSL-2	Research involving clean hood and room facility to grow cells, study infectious agents, work with pathological biological agents, microorganisms, biomedical research, tissue culture, mammalian cell culture techniques.	<p>Bio-Safety Cabinet Class II Type B2</p> <ul style="list-style-type: none"> • Size : 4 x 2 x 2 Feet • Cabinet provides product, person and environmental protection • 100% air exhaust through HEPA filter • Main Body: Constructed in MS epoxy powder coated • Inner Surface: Inner back wall and side wall of SS304 • Air Velocity: 100 ft/min ± 10 • Air Volume: Up to 500 CFM • LCD Display: Digital Microprocessor Control System for operating fluorescent, UV Light & Blower. • Working Noise level: < 65 dB • Power Supply: 230 V ± 15%, 50 Hz ± 3% 	
12	pH and conducting meter	To determine the pH and conductivity of solutions. Required to prepare solutions for developing films, scaffolds etc. To know the behavior of polymers and solutions are different pHs. To dissolve proteins and polymers at specific pH. Also required to know the conductivity and electrical behavior of polymers and polymeric solutions and nanosolutions	<p>Standard Kit with LE703 sensor. Suitable for Aqueous samples with mid to high conductivity (With additional Probe)</p> <ul style="list-style-type: none"> • Measuring range:0.01us/cm – 200mS/cm (conductivity), 0.01mg/L-200g/L (TDS) and 0-100°C • Resolution – automatic range • Error limits- ± 0.5% of the measured values • Temperature compensation- Linear 0.00%/°C- 10%/°C, ref temp 20-25°C • Automatic and manual endpoint recording- yes • Acoustic end point signal- yes • Visual end point signal- yes • Calibration- 1 point, 3 predefined standards • Memory size- current calibration • Sensor inputs- mini D/N • Display- 4.3” segmented LCD • Size/weight- 227 X 147 X 70mm/0.63kg 	
13	Micro balance	Required for weighing of the chemicals of less than 1 (mg) milli gram to 1 (µg) micro gram	<ul style="list-style-type: none"> • Maximum Capacity 220 Gms • Weighing platform dimensions 90 mm Readability 0.1 mg • Repeatability 0.1 mg • Linearity 0.2 mg • Setting Time 2 Sec • Sensitivity Temp Drift 2.0ppm/C • Weight of Balance 4.7 Kg 	
14	Milli Q water system	Produce pyrogen and RNase-free ultra-pure water for various applications like PCR, DNA sequencing,	<p>Ultrapure (Type I) Product Water Quality* Direct-Q® Systems</p> <ul style="list-style-type: none"> • Resistivity 18.2 MΩ·cm @ 25 °C • Production flow rate Direct-Q 3® 3 l/h @ 25 °C +/- 15 % • Instant flow rate (with Application Pak final filter) > 0.5 l/min 	

		mammalian cell culture, HPLC, electrophoresis, blotting, and electronics.	<ul style="list-style-type: none"> • TOC (w/o 185/254 nm UV lamp) < 10 ppb • TOC (with 185/254 nm UV lamp) < 5 ppb • Particulates (size > 0.22 µm)** < 1 particulate/ml • Bacteria** < 0.1 cfu/ml • Endotoxin*** (pyrogens) < 0.001 EU/ml • RNases*** < 0.01 ng/ml • DNases*** < 4 pg/µ <p>Pure (Type III) Product Water Quality*</p> <ul style="list-style-type: none"> • Ionic rejection > 96 % • Organic rejection for MW > 200 > 99 % • Bacteria and particulates > 99 % • Dimensions (H x W x D) 54 x 29 x 38 cm (21.3 x 11.4 x 15 in) • Net weight (Direct-Q® 3 system with 185/254 nm UV lamp) 8.6 kg (19.0 lb) • Operating weight (Direct-Q® 3 system with 185/254 nm UV lamp) 18.2 kg (40.1 lb) • Net weight (Remote dispenser) 2.15 kg (4.8 lb) • Operating weight (Remote dispenser) 2.68 kg (5.91 lb) • Built-in reservoir volume 6 l • Electrical feed voltage 100-250 V +/- 10 % • Electrical feed frequency 50-60 Hz +/- 10 % • Tap (feed) water connection ½" Gaz M • Tap (feed) water pressure 0.5 to 6 bar 	
15	Spectro photometer	Required for measuring the concentration of proteins or gold nanoparticles by using absorbance or Optical density.	<ul style="list-style-type: none"> • Precision in UV/Vis • User-friendly • intuitive software, • large sample chamber, easy exchange of accessories and lamps • Versatile and flexible – extensive range of accessories for liquid, gaseous, solid and powdered samples • Powerful and reliable – high-precision optics for precise analysis also for low concentrated and turbid samples, • 10-year long-term warranty Compliant to pharmacopoeias • hard- and software fully compliant to pharmacopoeias, special software module available • Spectrophotometer with split-beam technology • Wavelength reproducibility at 360.9 nm: ≤0.02 nm Stray light at 340 nm (NaNO₂): 0.02 %T Photometric measuring range: -3 - 3 A • Spectral resolution: 1.6-1.8 • Photometric accuracy (K₂Cr₂O₇): ±0.010 <p>A Spectral bandwidth: 1.4 nm</p>	
16	Humidity Chamber	To study the behavior of food, biobased products, composites and any other material at different temperature and humidities. Materials will be exposed to specific temperature and humidities and the changes in properties will be determined. Food grains will be stored at specific conditions for specified duration and	<ul style="list-style-type: none"> • Chamber size (250-300L) • Setting accuracy temperature up to 99.9 °C: 0.1 / from 100 °C: 0.5 • Temperature range without humidity: from -42°C up to +190°C • Temperature range with humidity from +10°C up to +95°C • Temperature distribution (spatial) +/- 0.5 up to 2K • Temperature sensor 2 Pt100 sensors DIN Class A in 4-wire-circuit for mutual monitoring, taking over functions in case of an error • Display resolution of display for setpoint values 0.1°C up to 99.9°C, 0.5°C from 100°C and for actual values 0.1°C (LED) • Humidity • Humidity control active humidifying and de-humidifying adjustable from 10-98 % rh with digital display of relative humidity - resolution of display 0.5 %, setting accuracy 1 % 	

		the changes in properties and chemical composition will be analyzed.			
17	3D printer Accessories (Reverse Engineering Software/ Scanner)	For Prototyping	SI.NO	Specification	Description
			Hardware		
			1	Light Source	Non-Laser based 3D Scanner, preferably Blue Light LED.
			2	Scanner type	Handheld Type
			3	Color Information	24 bits per pixel (bpp) or better
			4	Texture Resolution	1.3 megapixels (MP) or better
			5	Scanner Weight	Less than 1Kg.
			6	Integration with Hardware	Integration with Tablet and laptop for outdoor / onsite scanning applications.
			7	Scanning Operation	Scanning under ambient condition with consistent reliability and accuracy. Scanner should be ready for use within 5 min from plugging to the power and computer installed with the necessary software.
			8	Battery Backup	Minimum five-hours backup
			9	Data Acquisition Speed	10,00,000 points per second or higher
			10	3D point accuracy	0.05 mm or better
				Resolution	0.1mm or better
			12	Scanning Flat Geometries	Ability to capture flat parts
			13	Light Source Safety	Scanner to have safe light source for scanning human body
			14	Easy to use	Marker free scanning with no object preparation essential.
			15	Scanner Calibration	No calibration or minimum calibration requirement / should be easy to calibrate.
			16	Tracking System	Usage of electromagnetic tracking is not preferred
			17	Linear Field of View, H x W	Closet Range: 90 mm x 70 mm or more Furthest Range: 180mm x 140mm or more
			18	Angular Field of view, H x W	30 x 21 degree or better
			19	Interface	USB 2.0 and USB 3.0
			20	Working Distance	Less than a meter
			21	Power Consumption	12V, 24W
22	Scanner	Scanner must have a user-controlled			

	working temperature	temperature regulation, with a specified temperature of calibration.
Scanning Software		
23	Output mesh format	OBJ, PLY, WRL, STL, AOP, ASCII, Disney PTEX, E57, XYZRGB Software must support a raw data export in. scan format
24	Output Point cloud format	PTX
25	Output format for measurement	CSV, DXF, XML.
26	OS Support	Windows 10, 64 bits with Multi core processing
27	Hardware requirement	Support I5 or i7 processor with minimum 18GB RAM or More.
28	Scan Alignment	Software to support both manual and automatic align of surfaces, including flat surfaces. Software should automatically align with geometry as well as texture of part to be scanned.
29	Continuous scanning	Software able to allow scan continuously even the tracking lost while scanning.
30	Real time fusion	Software should be compatible with scanner to preview the model being built as the scanning is going on.
31	User Friendliness	Software to support defeature tool to automatically erase imperfections and fill holes with one click operation. Software should be able to guide through the steps and analyze data to build the best possible scanned data.
32	Measurement Tools	Software to have measurement tools for Linear, geodesic, sections, distance maps, Volume measurements, annotations, DXF export
33	Noise Filter Features	Software to have customizable 3D noise filters. It should automatically delete the flat background on the scanned objects (i.e., base / noise), to minimize manual erasing process.
34	Mesh Simplification	Software to support simplifying the mesh based on the application before exporting to any output format.
35	Texture	Software to support texture correction to remove excess glare and dark spots which added of different scanning conditions.
36	Software User Settings	Software to store different types of user settings and switch between them freely.
Reverse engineering Software.		
37	Solid Modeling	Software should have options to create 3D solid model (i.e., Extrude, Revolve,

				Loft, Sweep) / Automatic Extraction of Solid model based on shapes with minimal inputs.	
			38	Surface Modeling	Software should be capable to create 3D surface model (i.e., Extrude, Revolve, Loft, Sweep) / Automatic Extraction of surface model based on shapes with minimal inputs.
			39	CAD Editing	Editing of model is must for design changes/perfection with options like Cut, Boolean, fillet, chamfer, shell, thicken surface, Emboss, trimming, extend surface, Sew, surface offset, reverse normal, untrim surface.
			40	Sketching	Automatic Sketching of model and Automatic Sketch extraction from mesh is preferred.
			41	Surface Extraction	Software must be capable of extracting entire Surface model Automatically by adding surface on mesh model.
			42	Alignment	<ul style="list-style-type: none"> a) Software Should Automatically Display user various Aligning options(coordinates). b) Manually Align with user preferred coordinates with additional other alignment options like Datum, best fit, Quick fit, transform, target registration, Spear registration.
			43	Segmenting and unwrapping	Selection of each shapes/surface with different color for easy understanding to create model. Tools and features should be available for unwrapping of mesh model.
			44	Scan and Cad Comparison	Surface Comparison of cad and mesh for building accurate model based on accuracy deviations with user preferred tolerance is required. Deviations of model should be indicted with color difference.
			45	CAD Format Export	XDL, MDL, IGES, STEP, X_T, X_B, SAT, SAB, BIP, MODEL, CATPART.
			46	Exporting CAD	Exporting of cad models with features, tools and history used for creating model should be transferable to other cad modeling software in their respective native formats is preferred.
			47	Rendering options	<ul style="list-style-type: none"> a) Mesh: poly vertices, poly edge, shaded poly face, shaded poly face with poly edge, curvature, geometry type. b) CAD: Wire frame, Hidden lines, shaded Display, Shaded visible edge Display. c) CAD and mesh: Deviation from body, deviation from mesh, curvature, continuity, ISO line,

					Environment mapping.
			48	Automatic Modeling Features	Software should be capable of automatic functioning of tools like loft, revolve, sweep, extrude with reference editable options (i.e., Sketches, Vertices, and planes)
			49	Organic modeling	User should have tools for Modeling free form shapes and non-uniform shapes is preferred.
			50	CADto Mesh	Should be capable of converting CAD model to polygon model.
			51	Customizable user interface	Must have option to customize user interface based according to the user using.
18	Fermenter - prefer 5L capacity	Required for large scale production of proteins, enzymes and many industrial important products like probiotics, prebiotics, and antibiotics in controlled environment.	<p>Dimension: 590 x 730 x 565(W x H x D)mm Power supply 230 VAC or 120 AC Gasses Controlled @1.5 barg; dry, particle and oil free Water Controlled @ 2 barg Required inner autoclave dimension d + H [mm] UniVessel® 2 L 270 + 550 *</p> <p>Basic unit comprising... – Stainless steel housing – Digital controller – Operating interface – Gassing system with rotameter, solenoid valves or mass flow controller – Motor with controller – Thermostat system with circulation pump or dry heating with controlled cooling water valve – Up to 4 peristaltic pumps – Integrated amplifier.</p> <p>Culture vessel equipped with: Sensors for temperature, pH, DO, foam and level – Stirrer shaft with industrial sealing – Impeller – Aeration tube with sparger, sterile filters and exhaust cooler – Storage bottles, sample/harvest pipe, blind plugs – Tube, O-ring and tool kit ...and optionally a full range of accessories to meet your future needs.</p> <p>Digital Controller: – Single and Twin control capability – Graphical user interface with color display and touch screen – Integrated amplifiers for temperature, pH, DO, foam & level – Twin combined Level Foam controller – Space for Redox and turbidity amplifier, Single only – Integrated digital control loops for temperature, pH, DO, agitation, gasmixing, air flow and 2+ substrate – Level control via probe or balance – Multi-stage DO cascade control – Totalizer with digital calibration for probes and pumps – In-process pH-recalibration – Trend display for up to 6 process values – Balance connection – Developed according to GAMP guidelines.</p> <p>Temperature Control System Thermostat System – Integrated in basic unit – Powerful heater (1 kW) – Automatic controlled cooling water valve – Circulation pump – Temperature range 8°C above cooling water up to 80°C. Dry Heating System – Integrated in basic unit – Plug connector for heating blanket – Automatic controlled cooling water valve for optional cooling finger – For temperatures up to 60°C.</p> <p>MFCS/DA Software or similar kind of software.</p>		

TRAININGS & EVENTS

The Tenderer/Supplier will also organize at least 6 training sessions related to the functioning and operations of the Lab equipments/ machines/tools for the use of startups. This shall also include physical or web-based events such as Hackathon, Tech-Focussed Mentorship Sessions, etc.

Annexure II

Format for technical bid of the Tender for AIC-JIT Foundation (Proc/AIC-JITF/2021/001)

Sr. No.	Description of requirement	Enclosed	Enclosure No.
1.	Whether the firm is registered with proprietary firm, Partnership firm, Private Limited Company or LLP	Yes/No	
2.	Declaration by the bidder that he/she/company has not been blacklisted by the Deptts/Ministries of the Govt. of India/State Govt./PSUs	Yes/No	
4.	Copy of Registration Certificate/Allotment Letter of PAN/TAN From Income Tax Dept.	Yes/No	
5.	Copy of Registration Certificate Goods and Service Tax.	Yes/No	
6.	Partnership deed, if applicable	Yes/No	
7.	Demand draft / Cheque of Rs 1000/- as Bid processing (Tender) fee (Mention Dispatch details – Date and Mode) OR Through RTGS/NEFT (Mention Transaction details)	Yes/No	
8.	Demand draft / Cheque of Rs 5000/-/- as EMD (Mention Dispatch details – Date and Mode) OR Through RTGS/NEFT (Mention Transaction details)	Yes/No	
9.	Technical specification of the Instrument/machine	Yes /No	
10.	Financial Bid duly filled and attached	Yes/No	

Declaration of the Tenderer

This is to certify that I/we before signing this tender have read and fully understood all the terms and conditions contained herein and undertake myself/ourselves to abide by them.

(Signature of Tenderer with seal)

Name:

Place:

Date:

Seal:

Office Address: