

General Guidelines and Instructions to Suppliers

1. The **quotation document need to be addressed** to the Purchaser at the following address :

**Director, College of Engineering, Pune,
(TEQIP office), Shivajinagar, Wellesley Road Pune –411 005.**

2. **Envelope** containing the Quotations should be properly sealed and shall bear the following details:
 - a. TEQIP-III /CoE-S&IP Project
 - b. The Invitation for quotations title (i.e. Item Name)
 - c. Invitation for quotations i.e. PMSS Item code, on the front side of envelope along with a statement "Do not open before 9th October 2019 at 15.00 Hrs"
3. **Deadline for Submission of quotations**
 - a. Last date of submission of quotations: 9th October 2019 at 12.00 Hrs.
 - b. In the event of the specified date for the submission of quotations being declared a holiday for the Purchaser, the quotations will be received up to the appointed time on the next working day.

4. **Late Quotations**

Any quotations received by the Purchaser after the deadline for submission of quotations prescribed by the Purchaser, pursuant to ITB Clause 19, will be rejected and/or returned unopened to the supplier

5. **No credit** will be given to earlier deliveries and quotations offering delivery beyond the stipulated delivery period will be treated as non-responsive.

6. **Sealing and Marking of quotations**

The supplier shall seal the original copy of the quotations in envelopes, duly marking the envelopes with the address of the Purchaser at the following address:

**The Director, College of Engineering Pune, (TEQIP office) Shivajinagar,
Wellesley Road, Pune – 411005**

7. **Contact information of the quotations**

Supplier must provide the contact details such as Contact Person, Complete address, Tel. No. / Mobile No. E-Mail ID, TAN No., TAX No, PAN No.

8. **Total offer amount** for item in the quotation

All the taxes, levies, Duties, AMC's and various overhead charges if any, shall be mentioned while submitting the offer.

9. **Supporting Documents**

Completion Certificates of past supplies , Warranty/ Defect Liability, Drawings, Dispute Resolution, Arbitration, Force Majeure, Historical data in relation to the tender like annual reports, turn over detail etc can be submitted with the quotations, as a supporting document.

10. **Laws governing the contract**

- a. The contract is governed by the laws of India in force.
- b. The courts of the place from where the acceptance of tender has been issued shall alone have jurisdiction to decide any dispute arising out of or in respect of the contract.
- c. Irrespective of the place of delivery, the place of performance or place of payment under the contract or the place of issue of advance intimation of acceptance of tender, the contract shall be deemed to have been made at the place from where the acceptance of the tender has been issued.

11. **Currency and other conditions**

- a. The Prices should be quoted in Indian Rupees only.
- b. The delivery of the items must be at the College of Engineering, Pune.

12. Award of Contract

- a. Notwithstanding the above mentioned conditions, the Purchaser reserves the right to accept or reject any quotations and to cancel the procurement process and reject all quotations at any time prior to the award of contract

13. Schedule for Shopping Procedure

IFB No. TEQIP-III/MH/MH2G02/

Date of inviting the quotations:-	23/09/2019 @ 10.30 AM
Last date of submitting the sealed quotation to TEQIP office, COEP	09/10/2019 [up to 12:00 Hrs] noon
Opening of the quotations	09 th October 2019 [up to 15:00 Hrs] PM
Validity of quotation	Min 45 days
Delivery Period	4 weeks from the acceptance of PO

Venue for Opening of quotations:

TEQIP office, Main Building, College of Engineering, Pune,
Shivajinagar, Wellesley Road, Pune.

INVITATION FOR QUOTATIONS FOR SUPPLY OF

You are invited to submit your most competitive quotation for the following goods:

Sr. No.	Title /Name of Equipment	PMSS Code	Quantity	Brief Description
1	Combined Set-up for Surface Free Energy Measurement	TEQIP-III/2019/MH/coep/74	1	Refer Annexure 1
2	Battery pack	TEQIP-III/2019/MH/coep/75	1	Refer Annexure 2
3	Battery Tester for battery internal resistance measurement 150 $\mu\Omega$ to 3000 Ω	TEQIP-III/2019/MH/coep/76	1	Refer Annexure 3
4	1.Energy Meter (1) 2.Air Compressor (1) 3.Light Source(1) 4.Beam Splitter and Beam Splitter Mount(1) 5.Reflecting Mirrors and Mirror Mount(1)	TEQIP-III/2019/MH/coep/77	1	Refer Annexure 4

Annexure 1

Combined Set-up for Surface Free Energy Measurement

Key performance specifications:

Rotary evaporator:

- Manual control of heating bath, vacuum pump, chiller and drive rotation speed
- DC brushless motor drive with speed range of 20-280 rpm
- 1500 sqcm or larger cooling surface area for better recovery rate
- Manual lift with safety stop function
- Heating temperature range of RT to 180°C for water and oil bath application
- Bath capacity of 4 litres or more; bath with lower volume heat faster, saves time and energy
- Heating bath can accommodate up to 3 litres of evaporation and receiving flask
- Heating bath should have heat control accuracy of ± 1 K or less
- Safety temperature circuit and Dry Run protection of heating bath
- Locking function of heating bath for avoiding accidental changes of settings
- Heating bath can be used as standalone unit for different applications

Chiller:

- Temp. Range : -20 to 100°C
- Bath capacity : 5 litres or More
- Heater : 1000 watt
- Flow Rate (Max.) : More than 11 lit / min
- Temperature Accuracy : ± 0.1 °C
- Refrigerant : CFC free
- Cooling Capacity @20°C: 300 watt
- Bath Material: Tank - S. S.
- Outer Body Powder Coated M.S.
- Microprocessor PID Controller
- Digital Display
- Built in pump
- alarm for sensor break
- Set for external circulation

Vacuum Pump:

- Integrated vacuum controller for controlling process parameters and removable display
- Speed controlled vacuum pump with Manual and Automatic mode and cleaning function
- Speed of vacuum pump should be adjustable with digital display.
- Vacuum pump should have suction capacity of 1.3m³/h or more and ultimate vacuum level up to 7 mBar or less
- Vacuum pump should have auto-cleaning function and should come with mechanical silencer.
- Vacuum pump should display speed of the pump.
- For safety must have downstream vacuum safety emission condenser supplied with vacuum pump.

Specifications of Contact Angle Instrument:

- Contact angle measuring range- 0°-180°
- Contact angle accuracy - $\pm 0.1^\circ$
- Zoom – min 5x
- Resolution : 640 x480
- Exact drop volume calculator
- Calculation type – automatic
- PC required
- PC connectivity- USB 2/3
- Camera speed- 70 fps
- Surface tension of liquid calculation, work of adhesion and cohesion calculation by sessile drop method and pendant drop method.
- PC controlled auto dispensing module with interface control module.
- Surface free energy calculation of solid substrates by different methods like contact angle
 - 1) Girifalco –Goods-Fowkes –Young (GGFY)
 - 2) Contact angle Hysteresis Method
 - 3) Zisman Method
 - 4) Wu Harmonic mean

Annexure 2

Battery pack

Key performance specifications

Separate cells to be provided in packs for any of all or available from below varieties. The individual cells of the packs should be easily separable.

- A123's patented Nan phosphate chemistry or equivalent cells Each 20 Ah or lower capacity, Each cell nominal voltage 3.3 V. Quantity 20 cells.
- Samsung ICR18650-26F or equivalent cells, Each 2600 mAh nominal capacity or equivalent capacity, Each cell 3.6 V nominal voltage. Quantity 20 cells
- Samsung ICR18650-22F or equivalent cells, Each 2200 mAh nominal capacity or equivalent capacity, Each cell 3.6 V nominal voltage. Quantity 20 cells
- Samsung INR18650-25R or equivalent cells, Each 2500mAh nominal capacity or equivalent capacity, Each cell 3.6 V nominal voltage. Quantity 20 cells

Annexure 3

Battery Tester for battery internal resistance measurement 150 $\mu\Omega$ to 3000 Ω

Key performance specifications

- Simultaneous resistance and voltage measurements.
- Voltage measurement 10 μ V to 300 V
- Internal resistance measurement 150 $\mu\Omega$ to 3000 Ω .
- For carrying out high voltage battery pack tests on lithium ion battery
- For measurement of internal resistance of cells/ battery
- Statistics calculation and data storage function.
- Up to 125 measurements/s.
- 4.3 inch LCD colour display.
- Built-in GPIB, USB, LAN interfaces with SCPI support
- 4-terminal AC measurement
- Measuring result alarm function
- Accuracy in resistance $\pm 0.4\% \pm 0.05\%$ FS
- Accuracy in voltage $\pm 0.01\% \pm 0.01\%$ FS
- Resolution 10 $\mu\Omega$, 10 μ V
- Zero adjustment function
- Probes Large clip type lead / Alligator clip

Annexure 4

1. Energy Meter 2.Air Compressor 3.Light Source 4.Beam Splitter and Beam Splitter Mount 5.Reflecting Mirrors and Mirror Mount

Key performance specifications

1. Energy Meter -Max.Measurable power (with Thermopile Sensor)=30kW

Max.Measurable power (with Optical Sensor)=300mW

Min. Measurable power (with Thermopile Sensor)=10uW

Min.Measurable power (with Optical Sensor)=1nW

Measurement resolution-0.1% of full scale

Power sampling rate- 10 Hz

Accuracy-Digital Meter-- 1.0% of reading

Accuracy-System=Meter accuracy +sensor accuracy

2. Air Compressor

Regulation: ASSC

Drive: 'V' belt

Discharge pressure: 500 PSIG

Piston Displacement: 8.56 CFM

Compressor speed: 866 RPM

Receiver Capacity: 150 Ltrs.

3. Light Source

Power: 300 Watt

High brightness comparable to xenon light source.

Can be use with 1 chip, 3 chip and Full HD cameras

Remote control: Intensity adjustable with sterile remote control

120 times of xenon, so need to replace the bulb for years

LED provides a consistent color temperature even after a very long time

To get consistent visual effect (camera white balance is not disturbed)

Does not emit light in UV or IR. Environment friendly

STROZ compatible connector, it accepts fiber optic cables from 4mm to 6mm diameter.

4. Beam Splitter and Beam Splitter Mount

1"; 50:50 Laser Line plate Beam Splitter,

Coating: 1064 nm, t=5 mm

Damage threshold-3 J/cm²

Beam splitter coating on front surface for Nd: Optimized for 50:50 Beam splitting for 45 degree angle of incidence (AOI)

Antireflection coating applied to back surface

UV fused Silica substrate

Beam splitter Mount for 1" 50:50 Laser Line plate Beam splitter

5. Reflecting Mirrors and Mirror Mount

1"; Nd: YAG Mirror, 1047 – 1064 nm,

0 to 45 Degree AOI

Wavelength range: 1047-1064 nm

Ravg > 99.5% for S- and P- Polarization

Designed for use from 0 degree to 45 degree AOI

Damage Threshold:

Pulse: 25 J/cm² @ 1064 nm, 0.552 mm, 10ns, 10 Hz Kinematic Mirror Mount for 1" Optics