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GST NO.32AAAJI0299R1ZS

Date: 09 Oct 2020

Retender CORRIGENDUM TO TENDER NO

No: IISER/PUR/0355/TSM/SP/20-21

Sub: Supply of Pulsed Excimer Laser
Ref: Tender Enquiry No. 2020_IISRT_577136_1

Due to lack of competition, the above referred tender is hereby retendered with revised specifications (refer Annexure I).

Due date for submission of bids: 30 October 2020 (03.00 P.M)
Due date for opening of technical Bids: 31 October 2020 (03.30 P.M)

Thanking You,

Yours Faithfully

09/10/2020

Deputy Registrar (P&S)

Annexure - I

Technical Specifications for Excimer Laser and Associated Accessories

- **KrF Excimer Laser Specifications:**
  - Laser Wavelength should be 248 nm
  - Pulse Energy: The maximum laser pulse energy should be at least 700 mJ per pulse. The maximum pulse energy for the laser should not exceed per pulse by more than 10%.
  - Pulse Rep. Rate should be at least 10 Hz and continuously variable.
  - The average pulse duration should not exceed 20 ns.
  - The maximum average output power of the laser beam should at the least be 7 W and should not exceed by more than 10%.
  - Pulse-to-Pulse Energy Stability should be ≤1 % for very low energy variations between the subsequent laser pulses.
  - Laser beam pointing stability (1 sigma) should be ≤ 50 μrad
  - Beam Dimensions (V x H) should be approximately 25 × 10 mm^2
  - Beam Divergence (V x H) should be ≤ 3 × 1 $mrad^2$
  - The laser should be capable of operating with single phase regular Indian power supply.
  - The laser tube and other associated components should be designed to minimize the effects of halogen corrosion and contamination to ensure long life time of gas.
  - Operable in constant energy and constant voltage modes.
  - System should be air-cooled only up to 20 Hz. Water cooling at higher repetition rates is acceptable.

- **The system should have:**
  - An internal gas purification system having integrated electrostatic gas filter for extended operation of laser gas.
  - The system should come integrated Oil Free Vacuum pump (used to evacuate the laser tube before a gas fill) and inbuilt halogen filter.
  - The lifetime (50% drop of maximum energy) of KrF gas mixture should be clearly mentioned in the quotation. This lifetime should be more than 8 million shots from one fill of KrF gas mixture. If the laser is not used after a refill, it should take minimum 18 days for the energy to be half of the maximum energy.
  - The system should have an Integrated Energy monitor for stabilized operation.
  - The system should have Magnetic Assist Protection for Optimized discharge and long lifetime of Thyratron.
  - The laser system should be controllable through a handheld keypad which can be used to control any action of the laser and to fill in process gas. The handheld keypad should be supplied along with the laser system.
  - The system should have a suitable communications interface such as RS232 and be controllable via a basic software interface on a computer.
  - The system should also have an external electrical trigger facility with TTL pulse and synchronous output in internal or external trigger operations.

Other requirements

a) The system should have a modular design for easy service ability and troubleshooting. Components should be easily accessible for maintenance as and when needed.

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b) The system should incorporate necessary safety interlocks to permit safe operation of the equipment.

c) All utilities for installation of the system (Space, support table, electrical power, compressed air, etc.) should be clearly stated in the quotation.

d) The Manufacturer/Indian representative should undertake to install and commission the system at the purchaser's laboratory in the event of an order and demonstrate satisfactory performance. The installation and commissioning should be provided by the Manufacturer or their Indian representative. The Indian representative should have well proven service capability on similar systems.

e) All the technical literature/catalogues of various sub-systems in English, must accompany the quotation. In the event of an order, the manufacturer should undertake to supply all documents including complete system description, operation and service manuals, and full description of hardware and software used. Hard-copy of all manuals including operation, maintenance and service manuals along with circuit diagrams of main equipment and all its accessories should be provided.

f) The equipment should be guaranteed for trouble free performance at the purchaser's laboratory, for a period of two years or more from the date of commissioning of the equipment.

g) A list of at least five references in India, having similar systems installed by the vendor in the recent 3 years, must be provided and this will be one of the main criteria for decision making. Reference letters should be provided.

h) The manufacturer or their Indian representative should have three or more factory trained engineers locally for after sales support and maintenance of the system. This support and maintenance should be easily available (within one week) when required. This should be stated in the quotation. The training certificates of the trained engineers should accompany the bid.

i) The system quoted should be a standard model available in the market and not a customized one. The datasheet of this model should be available on the manufacturers' website.

j) In the first year after installation, if the instrument shows any problem/break down, the vendor is responsible for replacement of the full system with a new updated one within 3 months.

k) Output energy and energy stability needs to be demonstrated at the time of installation. Test reports must be supplied along with the laser system.

2. Gases and regulators as required for the laser to be quoted:

a) KrF Premix gas in 11/49 lit cylinder. (Please quote both options) + stainless steel gas regulator for premix cylinder: 1 No.

b) The purity of the gas mix and helium gas should be clearly mentioned.

c) The regulators should be for high purity gas and suitable for corrosive gas.

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d) The manufacturer of the gas regulator, if being provided by a third-party supplier should be clearly mentioned.

3. Accessories to be quoted:

a) External Energy meter:

- Display Unit having a large backlight LCD display, Digital reading display, Statistical Analysis (Mean, Max, Min, std deviation etc),
- USB interface for connecting to a computer.
- The energy meter should come with a rechargeable battery & AC power adaptor.
- The energy meter should have a USB interface for connecting to a computer.
- Energy Sensor having 1mJ -1J range, >35W Avg. power measurement capability, ≥50 mm diameter, Damage threshold should be > 500 mJ/cm^2.

b) Other Consumable such as Halogen Filter, O-rings and Spare Parts like Varistors, Trigger Board, Rear mirror, Output coupler, etc to be quoted.

c) Two numbers of Laser Safety Goggles for working with 248 nm wavelength laser light should be quoted.

d) Additional warranty per year should be quoted. Annual maintenance after warranty period each year (e.g. 4th, 5th, etc.) should be quoted.