

## **Global Tender notification for the procurement of a “Femtosecond Fibre Laser”**

Ref: PH/SBM/513/2021-22

Date: 30/03/2022

This is a notice inviting global tenders for the procurement of a “Femtosecond (fs) Fiber laser” that will be utilized for building femtosecond laser-writing facility and for nonlinear optical characterizations. Femtosecond laser-writing is a powerful and unique technique for creating three-dimensional integrated photonic devices in transparent dielectric substrates such as glass. The required technical details including terms and conditions are provided below. The last date of reaching the quotation to us [by post or in-person] is mentioned below.

### **Specifications:**

1. Pulse repetition rate (PRR): Factory set at 500 kHz. PRR should be tunable by software at least in the range of 5 kHz to 40 MHz [for example, 5 kHz, 10 kHz, 20 kHz, ..., 250 kHz, 500 kHz, 1 MHz, ...]
2. Energy per Pulse:  $\geq 15$  micro-J. A fixed pulse energy of  $\geq 15$  micro-J is required at 5 kHz to 500 kHz PRR range. Specify the variation of pulse energy as a function of PRR (a graph or a table)
3. Average power:  $\geq 10$  W at 500 kHz PRR
4. Pulse width and chirping: Pulse width should be factory set at  $< 350$  fs. Pulse width should be tunable up to 10 ps by software. The laser should be optimized in the range of +5ps of upchirp to -10ps downchirp.
5. Temporal pulse shape: close to Gaussian/Lorentzian
6. Beam shape (cross-section): Gaussian
7. Beam Quality:  $M^2 < 1.2$
8. Beam diameter: 3 +/- 0.5 mm
9. Central wavelength: 1030 +/-5 nm [laser pulses should be close to bandwidth-limited at the factory set pulse width]
10. Polarization: Linear, ratio  $> 100:1$
11. Operating temperature: At least in the range of 18 to 35°C
12. Beam pointing stability: as good as possible, preferred  $< 30$  micro-rad /°C
13. Cooling: Air-cooled

14. Mode of operation: Free space output, software controlled, capable of performing remote diagnosis.
15. Power stability: Excellent power stability (<1% rms over >12 hours) is desired
16. Operating voltage, frequency: 220 VAC, 50 Hz
17. All accessories such as necessary software, connectors, adapters, cables etc. required for the independent operation of the laser should be included.
18. Installation should be performed on site
19. The vendor/company and/or their associate (agent) in India should provide after sales service, full support, and onsite repair if required.
20. Warranty: 1 year [onsite repair is preferred] from the date of installation.  
Please quote for extending the warranty period for an additional one (i.e., total of two) as well as two (i.e., total of three) years.
21. In addition to the emission of laser pulses at a given PRR (specification 1), 'Burst Mode operation' is preferred. Number of pulses and rhythms should be controllable. The time between bursts should be varied at least from 50 ns to 100 ns.
22. Integration: The vendor/company should provide a complete factory set integrated system. Testing and documentation should be done using the complete system, assembled, and integrated in the factory.

#### **Terms and conditions:**

1. The bid should be submitted in a two-cover system, i.e., technical bid and commercial bid separately in sealed covers. The technical bid should contain all commercial terms and conditions, **except the price**.
2. The technical bid must contain a point-by-point technical compliance document. The technical proposal should contain a compliance table that should describe your compliance in a "yes" or "no" response against each specification. If "no" the second column should mention the extent of the deviation. The third column should state the reason for the deviation, if any. The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirement table below. **Tender documents without technical compliance documents will not be considered.**

3. In the commercial bid, the price should be inclusive of all discounts.
4. The vendor/company should have a track record of having previously supplied **at least five similar equipment** (i.e., micro-Joule fs fibre laser) in India in the past five years (please furnish the details). It would be desirable to provide two reference letters from customers in India.
5. It is desired that the vendor/company had supplied similar fs lasers for the purpose of *fs laser-writing of optical waveguides* in well-known national/international institutes/universities (please furnish the details e.g., published articles in reputed international journals [with impact factor > 3] mentioning that a similar product has been used for fs laser-writing of optical waveguides).
6. The vendors quoting should ideally be registered with IISc, and the quote should ideally carry the vendor registration number in the bid.
7. Lead time should be clearly mentioned in the technical and commercial bids.
8. The offer shall be valid at least 90 Days from the date of opening of the commercial bid.
9. The vendor/company should have existence for a minimum of 3 years. (Enclose Company Registration Certificate).
10. The vendor/company must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere.
11. The quotations should be on C.I.P. Bangalore basis (by Air Freight only). Please provide Itemized cost of the system and required accessories. The quotation should mention the terms of delivery, delivery schedule, estimated delivery date, and payment terms.
12. The Institute reserves the right to accept or reject any bid, or to annul the bidding process and reject all bids, at any time prior to the award of contract without thereby incurring any liability of the affected bidder or bidders.
13. Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:
  - a. To accept OR reject lowest tender or any other tender or all the tenders.
  - b. To accept any tender in full or in part.
  - c. To reject the tender, offer not conforming to the tender terms.

14. The tender documents can be sent at the following address by post or in-person, and the document should reach us on/before **22 April 2022**.

The Chairman

Department of Physics

Indian Institute of Science,

Bangalore 560012, Karnataka, India

Attention: Seababrata Mukherjee