Indian Institute of Technology Madras

Department of Chemistry
Chennai 600 036, India

DR. B. RAJAKUMAR
Associate Professor

Tender Enquiry No: CHY/BRAJ/2013-14/014/SPLX December 6, 2013

Sub: Quotations required for an Excimer laser

Dear Sir,

I would like to buy an Excimer laser to emit at 248nm, 193nm and 351nm wavelengths. The technical specifications are attached with this letter. I request you to kindly send your quotations according to the specifications attached with this letter before 5:00 PM of 27th December 2013 (Friday) along with the corresponding manuals, data sheets, technical specifications and the user list. Please submit your quotations following two bid system in sealed and signed envelops (one technical bid and one commercial bid). The quotations should be addressed to

DR B RAJA KUMAR
Associate Professor
Department of Chemistry
Indian Institute of Technology Madras
Chennai - 600 036.

Sincerely

(Dr B. Raja Kumar)

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Tender Specifications for an Excimer laser (Fluorine version)

We would like to buy an Excimer laser. The Excimer laser should be able to produce 248nm, 193nm and 351 nm, when filled with KrF, ArF and XeF respectively. The Excimer laser should have the following technical specifications.

Technical Specifications:

- Energy : =200 mJ/Pulse @ 193 nm
  : =400 mJ/Pulse @ 248 nm
- : =200 mJ/Pulse @ 351 nm
- Pulse Rep. Rate : 20Hz
- Average Power : 4 W @ 193 nm; 7 W @ 248 nm; 4 W @ 351 nm
- Pulse to pulse Stability : 1%
- Pulse Duration : ~20ns
- Beam Dimensions : ~25x 10mm^2
- Beam Divergence : ~3x1 $mrad^2$
- Electrical requirement : 230V ± 10%, 50Hz (Preferably Single phase)
- Cooling : Air-cooling
- Laser Tube : Metal ceramic technology
- Gas life time : > 20 million shots from one fill @ KrF gas mixture

- The laser should have an external electrical trigger facility with TTL pulse and synchronous output in internal trigger operations.
- Necessary vacuum pump (oil free) and halogen gas filters should be integrated inside the laser system.
- The laser system should be controlled through a remote control and should have RS 232 interface to control through a windows based computer.
- The laser should have an inbuilt energy monitor with output stabilization.
- Smooth ceramic pre-ionization for pulse to pulse stability is mandate.
- The laser should have internal gas purification system for extended gas life time and tube windows.
- The laser should have used metal ceramic tube technology.
- The laser should have magnetic assist protection for extended thyratron life time.
- Window cleaning Interval should be >100 million shots.
- Laser tube life should be greater than at least 1 billion shots.

- The laser should operate with air-cooling up to 20 Hz.
- Single phase electrical power supply for the operation of laser is preferred.
- All gases with the corresponding regulators and fittings required for the operation should be quoted for the proposed system. Both individual gases and pre-mixed gases should be quoted. Supplier should clearly indicate the purity and quantity of each type of gas.
- A suitable energy meter to measure the energy of all the wavelengths emitted by the Excimer laser should also be quoted.
- Two pairs of suitable laser goggles should be supplied.
- Two beam splitters for 248nm should be supplied.
- Two Plano convex lenses for 248 nm with suitable focal length should be supplied.
- Two AR coated windows for 248 nm preferably with 50 mm diameter should be supplied.
- All Technical literature/catalogs of various systems should accompany the quotation. All the documents should be in English.
- Installation and commissioning should be provided by the supplier or its Indian agent. The Indian agent should have well proven service capability on similar systems and should have factory trained. The vendor/supplier should have service engineers for good after sales-support. Additional technical details of the experience of the engineers should be mentioned in the offer.
- A list of references in India, where similar systems have been installed, must be provided and this will be taken very seriously while making the decision.

Terms & Conditions

Quotations are invited in two bid format (Technical & Price bid) in sealed individual envelops for the above equipment in the name of

DR. B RAJA KUMAR
ASSOCIATE PROFESSOR
DEPARTMENT OF CHEMISTRY
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI 600036

The last date for the submission is: 21 days from the date of enquiry.

Complete warranty should be at least for one year from the date of installation.

The price quoted should be CIP Chennai. The payment will be done via establishment of LC.

The vendor will have to submit the performance guarantee at 5% of the amount quoted, which is returnable.