

To

As per the list attached

Sir,

Subject: **Inviting quotations for the supply of 1 set of Portable Photosynthetically Active Radiation (PAR) Sensor applicable for shallow water environment.**

1. You are requested to submit your most competitive quotation in a sealed cover under two bid systems for the supply of 1 set of portable Photosynthetically Active Radiation (PAR) Sensors applicable for shallow water environment (less than 50 meter) as per the specifications given in **Encl.1.**
2. The offer should be submitted in two parts – PART A and PART B. The PART A should contain the technical bid consists of technical details and unpriced (price blanked) bid. The PART B should contain the price bid. **PART A and PART B are to be sealed in separate covers, written on covers as "Technical Bid" (for PART A) and "Financial Bid" (for PART B) and both covers together to be put in another sealed cover, superscribed as "Quotations for 1 set of Water Quality Sensors"** and should be addressed to the Project Director, ICMAM Project Directorate, Ministry of Earth Sciences, NIOT Campus, Velachery-Tambaram Main Road, Chennai 600 100 on or before **June 16, 2010 by 5.00 p.m.**
3. The sensor shall be robust and able to produce high precision results in both freshwater as well as saline water.
4. A representative of the manufacture/ distributors shall give a demonstration after the successful procurements to the buyer.
5. The quotation should be valid for 180 days from the due date and the period of delivery required to supply should also be clearly indicated.
6. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the quotations, wherever applicable.
7. Bidder should furnish a list of firms where the similar sensors are supplied at least in the last 3 years along with their Performance Certificate.

8. In case of local firms, quotations should be for free delivery to this Institute. If quotations are for Ex-Godown, delivery charges should be indicated separately.
9. For firms outside Chennai, quotations should be for CIF Chennai. If CIF, consignment freight charges by passenger train/lorry transport must be indicated. If Ex-Godown, packing forwarding, freight charges must be indicated. The delivery should be made at our office. No advance payments will be made. Payments are only through Foreign Draft after supply of sensors or Letter of Credit.
10. For the items supplied in Indian Rupees, payment will be made after delivery and checking completion of installation, replacements etc. In case of items quoted in foreign currency, payments will be only by way of Foreign Draft after supply or Letter of Credit will be opened. ICMAM Project Directorate is exempted in paying from customs duty
11. If the bidder is a foreign supplier, details of service support available in India should be given (with details of name of agent, address and duration of their affiliation).
12. Goods should be supplied carriage paid and insured.
13. Goods shall not be supplied without an official supply order.
14. Goods should be supplied within 6-8 weeks from the date of confirmation of order/opening of LC. In case of LC, all banking charges within India will be incurred by Purchaser and outside India will be incurred by Supplier.
15. Since ICMAM Project Directorate being Government organization, no advance payment will be made. Every attempt will be made to make payment within 30 days from the date of receipt of bill/acceptance of goods, whichever is later.
16. The equipment is to be guaranteed for a trouble-free performance for a minimum period of 12 months from the date of installation and/or testing or otherwise as specified in the specifications.
17. In case of dealers quoting on behalf of original equipment manufacturers, an authorization letter for quoting should be obtained from the original manufacturers and submit it along with the bids for the products they quote.
18. The ICMAM Project Directorate will have the right to accept or reject any bid without any reason therefore. It will have the right to cancel the tender in full or part or to change the quantity of items mentioned in the tender without assigning any reason therefore.

Bidder should attach details regarding ISO certification obtained for their firm

**Project Director**

### Specification for Photosynthetically Active Radiation (PAR).

SI No	Technical Items	Desirable ranges
1	Instrument maximum operational depth	Up to 50 meter
2	PAR spectral range	400-700 nanometres
3	Absolute calibration	$\pm 5\%$
4	Sensitivity	Upto $4\mu A$ per $1000 \mu mol s^{-1} m^{-2}$ in water
5	Measurement unit	Average of 60 seconds in $\mu mol s^{-1} m^{-2}$
6	Linearity	Maximum deviation of 1%
7	Stability	$<\pm 2\%$ change over 1 year period
8	Response time	10 $\mu S$
9	Temperature rating	0-50 <sup>0</sup> C
10	Angular accuracy	Cosin corrected from 0-80 <sup>0</sup> in vertical, Azimuth Error $<\pm 2\%$ error at 45 <sup>0</sup> from vertical , over 360 <sup>0</sup>
11	Detector	High stability silicon photovoltaic detector.
12	Sensor system	Corrosion free metal with acrylic diffuser for both fresh and salt water application, withstand up to 60psi.
13	Mounting house	Suitable mounting device with made of stain less steel that can able attach the sensor for lowering in to the water.
14	Cable	Up to 50 meters