



66 -- Spectrometer

General Information

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Contracting Office Address

Department of the Navy, Office of Naval Research, Naval Research Laboratory, 4555 Overlook Ave. S.W., Washington, DC, 20375

Description

This is a combined synopsis/solicitation for commercial items prepared in accordance with the format in Federal Acquisition Regulations (FAR) Subpart 12.6, as supplemented with additional information included in this notice. This announcement constitutes the only solicitation; proposals are being requested and a written solicitation will not be issued. The solicitation, N00173-06-R-DB02, is issued as a Request for Proposal (RFP). The solicitation document and incorporated provisions and clauses are those in effect through FAC 2005-08 and DFARS Change Notice 20051220. The associated small business size standard is 334516 and 500 employees. CLIN 0001, the Naval Research Laboratory has a Requirement for a high repetition rate

spectrometer. This equipment is needed to provide spectroscopic measurements over a large spectral range and at a high repetition rate. Because the effects to be investigated are inherently nonlinear, and because sources may fluctuate from shot to shot, the system must be able to simultaneously record signal and reference spectra and process the full spectrum at a 1 kHz repetition rate in the visible and at 50 Hz in the NIR. The system requires an imaging dual exit port spectrometer that can accommodate two cameras simultaneously. One camera will cover the ultraviolet and the visible spectral range (200 ? 900 nm) with an intensified CCD camera. The second camera will cover the near-infrared spectral range (900-1700 nm) and also be an imaging camera (2D). Switching between cameras must be accomplished via either a motorized turning mirror or stationary dichroic mirror. The system must have at least 3 automatically accessible gratings, with additional capability to manually switch among different grating triplets. The system operation must be automated and come with LABVIEW drivers. The visible camera (0.2 ? 0.9 micrometer) must be able to record two spectra in parallel at 1 kHz repetition rate on a single CCD and allow for division of the two directly on-chip for real time data acquisition. The camera must be configured to trigger in sync with a 1 kHz laser source. Furthermore, to accommodate fluorescence decay measurements, it must have a minimum gate width of 5 nanoseconds or less which can be delayed with respect to the laser pulse by up to at least 5 milliseconds with a precision higher than 50 ps. The near-infrared camera (0.8 ? 1.7 micrometer) must be able to record two spectra in parallel, and at least allow for post-process binning. The IR camera must record data at a minimum of 50 Hz. Due to the complexity of the technology, it is required that the vendor awarded the bid demonstrate proven capability to deliver a suitable system. Specifications for the imaging spectrometer: Input: Fiber coupling matched to the monochromator f number using a 2-leg fiber bundle, one bundle for reference and one for signal.; Each bundle must consist of a minimum of 7 fibers to account for beam walk and distortions during measurements.; Fiber transmission range must span 0.2-1.7 micrometers; Two additional 2-leg fiber bundles required. Spectral Ranges: Two triplet grating turrets with the following gratings: Grating One must be optimized for the mid-range of the visible camera: blazed near 500 nm and with a groove density designed to provide single-scan coverage from 450-750 nm over the width of the visible camera, with a resolution less than 0.8 nm; Grating Two must be optimized for the UV-range of the visible camera: blazed near 250 nm and with a groove density designed to provide single-scan coverage from 200-300 nm over the width of the visible camera, with a resolution less than 0.25 nm; Grating Three must be optimized for high resolution near and just red of 532 nm: blazed near 570 nm and with a groove density designed to provide less than 0.07 nm resolution and a spectral coverage of greater than 1000 wavenumbers over the visible camera.; Grating Four must be optimized for the cross-over point between the camera ranges: blazed at 900 nm and with a groove density designed for the greatest overall diffraction efficiency from 850-1000 nm.; Grating Five must be optimized for the NIR camera: blazed near 1200 nm and with a groove density designed to provide single-scan coverage from 1.06-1.65 micrometers over the width of the NIR camera, with a resolution of less than 2 nm.; Grating Six must be optimized for higher-resolution NIR scans: blazed near 1300 nm and with a groove density designed to provide single-scan coverage from 1.2-1.4 micrometers over the width of the NIR camera, with a resolution of less than 0.5 nm. Motorized automated filter wheel for discrimination against higher order grating effects with the following filters: At least one open position.; 400 nm long pass filter; 600 nm long pass filter; 800 nm long pass filter and; 1000 nm long pass filter. Specifications for 0.2 ? 0.9 micrometer Camera: Minimum frames per second: 1000 with full vertical binning. Minimum required quantum efficiency at various wavelengths: 200nm: 15 percent, 400 nm: 15 percent, 600 nm: 35 percent, and 800 nm: 30 percent. Phosphor: Maximum of 5-microsecond decay. Digitization: Minimum of 16 bits. Trigger & Acquisition Requirements: Completely controllable by GUI-software interface, System delay of 30 nanoseconds or less, Delay Range: approximately 5 ns to 20 ms, Timing resolution: 40 ps, Gate width: 5 ns to 10 ms, and Pulse counting mode. Specifications for 0.8 ? 1.7 micrometer Camera: Minimum Frames per

second: 50, Format: Minimum 320 x 256, Quantum efficiency: Peak efficiency of at least 80 percent, and Digitization: Minimum of 16 bits. Deliverables: Spectrometer system, written operation and maintenance manuals, warranty of two years on all parts and labor, and installation and demonstration that the system meets the specified requirements.

Delivery and acceptance is at NRL, Washington, D.C. 20375, FOB Destination. The contractor shall deliver the spectrometer no later than sixty (60) day after contract award. The provision at 52.212-1, Instructions to Offerors-Commercial, applies to this acquisition. Award will be made to that offeror whose proposal is determined to be the best value to the Government, proposed price and other factors considered. The Government reserves the right to make award to other than the low offeror. The provision at FAR 52.212-2, Evaluation--Commercial Items is incorporated. The Government intends to award a contract resulting from this solicitation to that responsible offeror whose offer conforming to the solicitation will be the most advantageous to the Government, price and other factors considered. The following factors shall be used to evaluate the offers: (i) Technical capability of the item offered to meet the Government's requirement; (ii) Past Performance; and (iii) Price. Technical capability and Past Performance, when combined, are more important than price.

Offeror must complete and submit with its proposal, FAR 52.212-3 Offeror Representations and Certifications--Commercial Items and DFARs 252.212-7000 Offeror Representations and Certifications--Commercial Items, which are identified as B and available electronically at : <http://heron.nrl.navy.mil/contracts/repсандcerts.htm>

The clause at FAR 52.212-4, Contract Terms and Conditions-Commercial Items and FAR 52.212-5, Contract Terms and Conditions Required To Implement Statutes or Executive Orders--Commercial Items, applies to this acquisition. The additional clauses cited within this clause are applicable: 52.203-6, 52.219-6, 52.219-8, 52.219-14, 52.222-3, 52.222-19, 52.222-21, 52.222-26, 52.222-35, 52.222-36, 52.222-37, 52.222-39, 52.225-13, and 52.232-33. The DFARs clause at 252.212-7001, Contract Terms and Conditions Required to Implement Statutes or Executive Orders Applicable to Defense Acquisitions of Commercial Items applies to this acquisition. The additional clauses cited within this clause are applicable: 52.203-3, 252.225-7012, 252.227-7015, 252.225-7036, 252.227-7037, 252.232-7003, 252.243-7002, 252.247-7023, and 252.247-7024. The following additional FAR and DFARs clauses apply: 52.204-7 Central Contractor Registration, 252.204-7004 Alternate A. and 252.211-7003.

The following additional FAR clause applies: 52.214-31. Facsimile proposals are authorized and may be forwarded to the contract specialist point of contact provided below. Any resultant contract will be DO Rated under the Defense Priorities and Allocations System (DPAS). The Contract Specialist must receive any questions concerning the RFP no later than 10 business days before the response date of this solicitation. An original and two copies of the offeror proposal shall be received on or before the response date noted above, 4:00 P.M., local time at the NRL address above, Attn: Contracting Officer. The package should be marked with the solicitation number, due date and time. The U.S. Postal Service continues to irradiate letters, flats, Express and Priority Mail with stamps for postage and other packages with stamps for postage destined to government agencies in the ZIP Code ranges 202 through 205. Due to potential delays in receiving mail, offerors are encouraged to use alternatives to the mail when submitting proposals. All responsible sources may submit a bid, proposal, or quotation which shall be considered by the agency. Other business opportunities for NRL are available at our website <http://heron.nrl.navy.mil/contracts/rfplist.htm>. See Note Number 1.

Point of Contact

Daniel Brinkworth, Contract Specialist, Phone 202-767-6746, Fax 202-767-6197, Email dan.brinkworth@nrl.navy.mil

Place of Performance

Address: Naval Research Laboratory Washington, DC
Postal Code: 20375

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