Santanu Mahapatra
Professor

DEPARTMENT OF ELECTRONIC SYSTEMS ENGINEERING

Indian Institute of Science
Bangalore 560 012

Phone: 080-2360 0810 Xn.116
          080-2293 3090
          9945406328 (Mobile)

FAX   080-2293 2290

e-mail: santanu@iisc.ac.in

Date: 31st March 2021

Local Tender (India based vendors only)

To Whom It May Concern

This is an RFQ (Request for Quote) for procurement of **First-principles based quantum transport simulation software,** a limited tender for the Department of Electronic Systems Engineering at IISc, Bangalore. The software would be used to study the electronic structure of 2D materials and carrier transport in 2D material based electronic devices.

A. Procedure:

1. Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor.
2. Vendors will be required to submit a technical proposal and a commercial proposal in **two separate sealed envelopes**. Only vendors who meet the technical requirement will be considered for the commercial negotiation.
3. The Bidder should belong to either class 1 or class 2 supplier distinguished by their "local content" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter.
    a. Class 1 supplier: Goods and services should have local content of equal to or more than 50%.
    b. Class 2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.
4. Purchase preference as defined by the recent edits to GFR (within the "margin of purchase preference") will be given to Class-1 supplier.
5. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details

6. Sperate detailed justification needs to be given to substantiate the qualification as Class 1 and Class 2 suppliers and the intender reserves the right to cross-check the factual validity of the same and one if some foreign parts or equipment is being put forward then please submit the "*bill of material*" details for the same for evaluation.

7. The deadline for submission of proposals is **15th April 2021, 5:30 pm** Indian Standard Time. Bids should arrive at the office of **Prof. Santanu Mahapatra, Department of Electronic Systems Engineering, Indian Institute of Science, Bangalore 560012**, India, by the above deadline.

8. The technical proposal should contain a technical compliance table with 5 columns.
    a. The first column must list the technical requirements, in the order that they are given in the technical requirement below.
    b. The second column should provide specifications of the software against the requirement (please provide quantitative responses wherever possible.
    c. The third column should describe your compliance with a "Yes" or "No" only. Ensure that the entries in column 2 and column 3 are consistent.
    d. The fourth column should state the reasons/explanations/context for deviations, if any.
    e. The fifth column can contain additional remarks from the OEM. You can use this opportunity to highlight technical features, qualify response of previous columns.

9. Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors

10. If multiple systems can fulfil the requirements, vendors can submit multiple bids.

11. In the commercial bid, please provide the cost of the software (including modules) for a **minimum 3 years of license**.

12. The quotations should be on FOR-IISc Bangalore basis in INR only. Since IISc is DSIR registered organization, hence it is eligible for GST rate @5% as the equipment is required for research purposes only.

13. Any questions or clarifications can be directed to:
    Prof. Santanu Mahapatra,
    Department of Electronic System, Indian Institute of Science,
    Bangalore 560012. Email: santanu@iisc.ac.in

B. Terms and Conditions

1. The decision of purchase committee will be final.
2. The vendor is responsible for the installation of the system at the IISc campus.
3. The RFQ must include references of 5 previous installations, preferable in India. Please provide the names and contact addresses of the referees, so that the committee can contact them independently. The reference letters can be used to disqualify vendors with poor track record.
4. The vendor must also submit a list of 50 customers where same software have been installed.
5. Clarify if periodic (preventive) maintenance be done by a trained on-site engineer or requires a specialist from the OEM. The vendor should have qualified technical service personnel for the equipment based in India and must assure a response time of <2 business days after receiving a service request.
6. The lead-time for the delivery of the software should not be more than 1 month from the date

of receipt of our purchase order.

7. The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason.

8. Wherever requested in this specifications sheet, data must be supplied along with technical compliance documents. Technical bids without supporting data will be deemed as technically non-compliant.

9. All guaranteed specifications will have to be demonstrated, upon request, in an active installation. Failure to demonstrate any promised specifications will be deemed as technical non-compliance.

10. Printed literature and published papers in support of all compliance to the prescribed specifications may be provided.

11. Technical evaluation by the institute may include demonstration to verify functionalities and capabilities of the software quoted. Any discrepancy between the promised specifications and demonstrated specifications will be deemed as technical non- compliance. If need arises, the vendor must be ready to physically visit IISc for a techno commercial discussion.

12. The **validity of commercial quotation should be at least 60 days** from the last date for the submission of tender documents.

13. 100% payments will be released after completion of delivery and satisfactory installation subject to TDS as per rules. As per GFR no advance payment can be made to domestic vendors, unless an equal amount of bank guarantee is provided.

Technical Requirements:

First-principles-based quantum transport simulation software with following integrated features:

- Both LCAO and Plane Wave based DFT (with Van der Waals models, non-colinear spin polarized calculations)

- Calculation of electronic structure including imaginary band structure

- LCAO-NEGF method based I-V calculation in transistor configuration

- Electron-Phonon coupling based transport calculation

- Spin-Torque Transfer (STT) for collinear/non-collinear spin

- Graphical user interface with following capabilities

    o Atomic geometry builder for molecules, crystals, nanostructures and devices

    o Interactive atomic geometry builder for low strain interface

    o Viewer for full and projected band-structure, density of states

- Multi-CPU parallelization

- Compatibility: CentOS and Windows

License Tenure

Minimum 3 years