



भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद- ८२६००४  
Indian Institute of Technology (Indian School of Mines)  
Dhanbad – 826004, Jharkhand, India

**Reminder**

No. M-500427-2016-17

Date: 22 February 2017

To  
M/s

Sir,

Indian Institute of Technology (Indian School of Mines), Dhanbad invites quotations for the following to be supplied and delivered in Mining Department.

S No	Full Description of items/ store	Qty	Rate	Amount
1	Supply & Installation of Radon measurement system (scintillation cells + vacuum pump-10 <sup>2</sup> tor+ PMT - a counting system) (Detailed Specification is given in Annexure – I)	One		
	Packing & Forwarding, if any			
	Freight Charge, if any			
	Installation, if any			
	CST/VAT, if any			
	<b>Grand Total</b>			

**Tender Schedule**

Particulars	Date & Time
Last date for seeking clarification/s (if any)	03.03.2017 at 3:00 P.M.
Date and time for submission of tenders	10.03.2017 at 3:00 P.M.
Date and time of opening of tenders	10.03.2017 at 4.00 P.M.

1. You are requested to quote your lowest rates for the supply of above items.
2. Clarification(s) sought after the prescribed date shall not be entertained.
3. You may send your representative in the office of the undersigned at the scheduled date and time of opening of tender.
4. Tender should be submitted in sealed cover only superscribed with Enquiry No. and due date at the following address only:

**The Asst Registrar (P&S)**  
**Indian Institute of Technology (Indian School of Mines),**  
**Dhanbad – 826 004 Jharkhand**  
**P: 0326-2235612**  
**E: [drps@ismdhanbad.ac.in](mailto:drps@ismdhanbad.ac.in)**

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भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद- ८२६००४  
Indian Institute of Technology (Indian School of Mines)  
Dhanbad – 826004, Jharkhand, India

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**Terms & Conditions**

- 1) Please submit authorized dealership certificate, if you are not a manufacturer.
- 2) Please mention Sales Tax, CST, VAT, TIN and PAN numbers and Bank Account Number and name of the bank/ branch in your offer.
- 3) Conditional offer will not be accepted.
- 4) Please indicate rate of taxes/ duties clearly. Rates quoted will be taken as inclusive of all taxes unless given separately.
- 5) The rates should be quoted for each item separately.
- 6) IIT (ISM) does not issue any Form 'C' or 'D' towards sales tax concessional rate. Hence, full rate of sales tax/VAT applicable should be quoted.
- 7) **Educational discount**, if any, should be clearly mentioned.
- 8) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
- 9) *The firm should provide at least 1 (one) year warranty on the equipment from the date of satisfactory installation.*
- 10) **Installation of the equipment and complete training to 4 persons on the use of the equipment at Indian Institute of Technology (Indian School of Mines), Dhanbad will be imparted by the firm at free of cost.**
- 11) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
- 12) *Each page in the bid document should be numbered properly.*
- 13) **The items/ materials shall be required to be delivered at Mining Department/ Section through Purchase & Store Section, IIT (ISM) Dhanbad at the risk and cost of the tenderer.**
- 14) Unloading & installation shall be the complete responsibility of the supplier.
- 15) The stores are required to be delivered within 08-10 weeks. Late delivery may not be accepted.
- 16) The items offered should be of good quality confirming to BIS standards, wherever applicable.
- 17) **Advance payment is not admissible.** Payment shall normally be made within 3-4 weeks subject to receipt and acceptance & installation (as per Purchase Order Terms) of the ordered materials/items.
- 18) In the event date on which the tender is opened for acceptance is declared to be a holiday, the tenders shall be deemed to remain open for acceptance till the next working day.
- 19) *Please send your offer by Regd.Post/ Speed Post/ Courier along with Courier receipt. Tender/ quotation will be received during IIT (ISM) working hours only (i.e. Monday to Friday). Late or delayed tenders shall be summarily rejected.*
- 20) Any other information that you may like to obtain, you are free to contact IIT (ISM) before submission of tender.
- 21) IIT (ISM) reserves the right to accept and/or to reject any/ all tenders without assigning any reason.

*[Signature]*  
Asst Registrar (R&S)

P: 0326-2235612

F: 0326-2296633

E: [drps@ismdhanbad.ac.in](mailto:drps@ismdhanbad.ac.in)

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## Technical Specifications

### Technical Specifications of Radon measurement system

No	Desired specifications
1	<ul style="list-style-type: none"> <li>• <b>Working principle:</b> Radon / Thoron detection by alpha Scintillation of radon and its decay products.</li> <li>• <b>Detector:</b> Approx. 153 cc scintillation cell</li> <li>• <b>Sensitivity:</b> 0.8 cph/(Bq/m<sup>3</sup>)</li> <li>• <b>Operation mode:</b> Radon: Fast or Sensitive mode Thoron: Decay mode Gross Alpha Counting Mode Software selectable mode.</li> <li>• <b>Sampling mode:</b> Flow mode with built-in pump (External pump NOT required)</li> <li>• <b>Cycle time:</b> 15 / 30 / 60 min / 120 min / 180 min</li> <li>• <b>Radon Response time:</b> Not more than 30 min for 95% of Radon.</li> <li>• <b>Interference:</b> Radon Interface &lt; 5% on Thoron. Thoron Interface &lt; 5% on Radon.</li> <li>• <b>Upper Det Limit:</b> at least 50 MBq/m<sup>3</sup></li> <li>• <b>Inbuilt sensors:</b> Temperature and humidity sensors.</li> <li>• <b>Operating conditions:</b> Temp 0 to 50 degree C and Rel. Humidity 0 to 98% non-condensing</li> <li>• <b>Inbuilt inlet progeny discriminator, NO interrence of Humidity &amp; Temperature. Drye tubes not required during measurement</b></li> </ul>
2	<p><b>Micro-controller based processing with following specification</b></p> <ul style="list-style-type: none"> <li>• Soft power ON/OFF switch on front-panel</li> <li>• 20×4 Line LCD display for concentration, menu and low bat indication.</li> <li>• 6 keys Keyboard for user interface.</li> <li>• Data storage: 1000 data × 10 data sets for Radon and Thoron. Separate memory for Radon and Thoron mode.</li> <li>• Built in RTC.</li> <li>• Data transfer using USB port (VCP)</li> <li>• External Battery connection with connector. user can select INT/EXT battery using selector switch.</li> <li>• Any 6V / 12 V EXT Battery can be connected to the instrument.</li> <li>• INT Battery can work upto 12 hrs for continuous use of operation.</li> <li>• Built-in DC adapter cum battery charger operating on 90-270 V AC 50 Hz</li> </ul>

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3	<b>Mass exhalation chamber</b> <ul style="list-style-type: none"> <li>• <b>Internal dimensions:</b> 100 mm Diameter × 50 mm Height</li> <li>• <b>Volume:</b> 0.4 Litre</li> <li>• <b>Sampling:</b> Both diffusion and flow mode</li> <li>• <b>Lid sealing to chamber:</b> Threaded</li> <li>• <b>Lid sealing to detector:</b> Threaded compatible to SRM detector and flow mode sampling lid.</li> <li>• <b>Material:</b> Aluminium</li> <li>• <b>Flow mode sampler:</b> Threaded disc with two 5 mm nozzles (or std. size)</li> </ul>
4	<b>Surface exhalation chamber</b> <ul style="list-style-type: none"> <li>• <b>Internal dimensions:</b> 300 mm Diameter × (50 mm &amp; 150 mm) height</li> <li>• <b>Volume:</b> Adjustable max. upto 14 Litre (two stage compartments of height 50, 150 for adjustable volume)</li> <li>• <b>Sampling:</b> Both diffusion and flow mode</li> <li>• <b>Lid sealing to chamber:</b> Flange type</li> <li>• <b>Lid sealing to detector:</b> Threaded compatible to SRM detector and flow mode sampling lid.</li> <li>• <b>Material:</b> Aluminium</li> <li>• <b>Flow mode sampler:</b> Threaded disc with two 5 mm nozzles (or std. size)</li> </ul>
5	<b>Radon accumulator</b> <ul style="list-style-type: none"> <li>• <b>Internal dimensions:</b> 200 mm Diameter × 105 mm height</li> <li>• <b>Volume:</b> 3 Litre</li> <li>• <b>Surface area:</b> 314 cm<sup>2</sup></li> <li>• <b>Sampling:</b> Both diffusion and flow mode</li> <li>• <b>Connection to detector:</b> Threaded compatible to SRM detector</li> <li>• <b>Material:</b> Aluminium double walled</li> <li>• <b>Flow mode sampler:</b> Threaded disc with two 5 mm nozzles (or std. size)</li> <li>• <b>Pressure relief vent:</b> 6 mm size auto shut-off valve connection</li> <li>• <b>Pressure bag:</b> 250 ml volume polymer bag (100 mm × 150 mm)</li> </ul>
6	<b>Water bubbler kit</b> <ul style="list-style-type: none"> <li>• <b>Kit contents:</b> Sampling bottles-10 nos, Bubbler- 2 nos 500 ml capacity syringe with 10 cm long nozzle-one No.</li> <li>• <b>Sample capacity:</b> 50 ml</li> <li>• <b>Head space volume:</b> 50 ml</li> <li>• <b>Material:</b> Borosilicate glass</li> </ul>

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7	<b>Soil probe</b> <ul style="list-style-type: none"><li>• <b>Probe length:</b> 1 meter</li><li>• <b>Hammering tool:</b> 500 gm hammer</li><li>• <b>Sampling connector:</b> 5 mm size nozzle – one No.</li><li>• <b>Probe handle:</b> detachable handle for removing the probe from ground</li><li>• <b>Material:</b> Hard S.S.</li></ul>
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**Other Terms and Conditions**

1. The firm should provide atleast 1 (one) year warranty on the equipment from the date of satisfactory installation.
2. Installation of the equipment and complete training to 4 persons on the use of the equipment at Indian Institute of Technology (Indian School of Mines), Dhanbad will be imparted by the firm at free of cost.
3. No advance payment or payment through bank in advance is admissible. The payment will be made only after satisfactory installation of the equipment.