

# TENDER DOCUMENT

*TENDER DOCUMENT FOR STRENGTHENING AND UP-GRADATION  
OF LABS OF ENVIRONMENTAL ENGINEERING*

*PAK RUPEES / CNF BASIS*

**TENDER NO. SAUG/ENV/2014**



**STRENGTHENING AND UP-GRADATION OF  
UNIVERSITY OF ENGINEERING & TECHNOLOGY  
AND ITS SUB-CAMPUS**  
UNIVERSITY OF ENGINEERING AND TECHNOLOGY TAXILA  
Tel: 051 9047633 Fax: 051 9047797



**UNIVERSITY OF ENGINEERING AND TECHNOLOGY TAXILA  
(STRENGTHENING AND UP-GRADATION OF UNIVERSITY OF  
ENGINEERING & TECHNOLOGY AND ITS SUB-CAMPUS)**

Phone: 92-51-9047633 Fax: 92-51-9047797

**TENDER DOCUMENT FOR STRENGTHENING AND UP-GRADATION OF LABS OF  
ENVIRONMENTAL ENGINEERING ON CNF / PAK RUPEES**

*Part (1): Terms and Conditions*

1. Please follow the given terms;
  - a. **The firm / bidder shall clearly provide the proof of Registration for GST / NTN on their printed letterheads.**
  - b. **Tender No., date & timing of opening should be clearly mentioned on the top of envelopes.**
  - c. **Submit your offer for each tender in separate envelopes.**
  - d. **No tender documents will be received after the closing date / time.**
  - e. **Bids will be submitted on "Single Stage two Envelopes" basis.**
  - f. **In case of closed/forced holidays, tender opening time/date will be considered as the next working day.**
  - g. **Price should be quoted with all accessories**
  - h. **It is the responsibility of the supplier to provide all necessary equipment with the basic unit to run the system.**
2. Certificate showing that the firm has not been blacklisted or debarred by any Government Department.
3. Preference will be given to those firms which have their Head Office/Branch Office and/or Technical Support/Maintenance Facilities at Rawalpindi, Islamabad or Wah Cantt.
4. The specifications of the equipment to be supplied are attached (**Part 3 of Tender Document**).
5. The material must be according to specifications.
6. The supplier is bound to replace within 15 days all or any part of the equipment found defective during initial inspection by Project Committee. The supplier shall provide replacement of defective items / parts to the purchaser at UET, Taxila main store. The supplier shall also remove defective parts / item(s) from Main Store UET Taxila without claiming any additional Cost.
7. Offers shall remain valid for 120 days from the date of opening. The bidders shall quote their prices inclusive of all duties / Taxes / Packing / Petrol / Transportation / Installation / Demonstration etc and all other expenses on delivery to consignee at UET Taxila premises.
8. The sealed bids complete in all respect must reach in the office of the undersigned along with earnest money (2%) in shape of **CDR to be attached with technical offer.**

9. The sealed tenders, complete in all respects, must reach the undersigned at the time and date notified in the advertisement. **Late receipts shall not be entertained**, whatsoever the reason may be.
10. The tenders shall be opened in the office of the undersigned at the notified date and time. The bidders or their representatives can be present if they so desire.
11. Only those tenders will be entertained which are absolutely clear / unambiguous and legible. Any unavoidable cutting / overwriting must be signed and initialed.
12. The offered items must be brand new and free from any manufacturing defect.
13. The University reserves the rights to inspect the working facilities and equipment of the supplier at any stage.
14. The items shall be supplied **within 45-days** of issuance of the Supply Orders.
15. A penalty of **0.5%** of the total cost or order can be imposed per day for delay on the part of the bidder up to maximum 20 days.
16. The University has the right to increase or decrease the quantum of work according to available budget. Prices must be inclusive of all freight, taxes and duties (if any).
17. In case of failure in the supply, the Project Purchase Committee will have the right to cancel the supply order and forfeit the earnest money and blacklisting.
18. In case of delay, Project Purchase Committee can provide extension in the date of supply to any bidder(s) provided valid reasons are given.
19. The payment shall be subject to satisfactory inspection report from the concerned evaluation committee and 10% of the total billed amount shall be retained by the University for a Period **Not less than Six Months**, as Security.
20. The bidders shall submit separately Technical and financial proposals for qualifying status.
21. Following documents must be attached with the technical proposal.

i.	Last income tax paid certificate (FBR)	vii.	GST / NTN valid Certificates
ii.	Last GST paid certificate (FBR)	viii.	No black listing on stamp paper
iii.	Client List	ix.	Bank Statement (worth 2 Million)
iv.	Work Experience	x.	Company profile
v.	Relevant Experience	xi.	Letter of appreciation from previous clients
vi.	Detail specification of equipment with literature	xii.	Warranty / Guarantee Letter

22. The winning bidder shall have to sign a prescribed agreement on the Stamp Paper of prescribed value (i.e. 0.25% of the total ordered cost) duly stamped from notary public.
23. Payment will be as per under university rule after receipt of the supply and satisfactory inspection.

24. The Project Purchase Committee shall have the powers to reject, in part or as a whole, any one or all the quotations without assigning any reason thereof as per PPRA rules.
25. The Tender / Relevant documents can also be downloaded from official website [www.uettaxila.edu.pk](http://www.uettaxila.edu.pk) of UET, Taxila or can be obtained from the office addressed below. For further queries regarding tender, bidder(s) are encouraged to contact / visit undersigned in the university working hours. Tender Notice can also be seen on website [www.ppra.punjab.gov.pk](http://www.ppra.punjab.gov.pk).
26. Tender submitted without challan form (Tender Fee) & earnest money CDR can be rejected at the time of opening of tender. Earnest money & challan form will be submitted against each tender separately.
27. The procuring agency "may reject all bids or proposals at any time prior to the acceptance of a bid or proposal. The procuring agency shall upon request communicate to any supplier or contractor who submitted a bid or proposal, the grounds for its rejection of all bids or proposals, but is not required to justify those grounds".
28. Tender will be opened in Conference Hall, Admin Block UET Taxila at **12:00 noon on 03.02.2014**.

**Prof. Dr. Saeed Ahmad**  
Project Director (SAUG)  
University of Engineering & Technology, Taxila  
Email: [dr\\_sahmad@yahoo.com](mailto:dr_sahmad@yahoo.com)



**UNIVERSITY OF ENGINEERING AND TECHNOLOGY TAXILA  
(STRENGTHENING AND UP-GRADATION OF UNIVERSITY OF  
ENGINEERING & TECHNOLOGY AND ITS SUB-CAMPUS)**

Phone: 92-51-9047633 Fax: 92-51-9047797

**TENDER NO. SAUG/ENV/2014**

**PART (2): SCHEDULE OF REQUIREMENTS FOR THE PURCHASE OF LAB EQUIPMENT FOR  
ENVIRONMENTAL ENGINEERING**

The delivery of services and supply will be made in 45 days after issuance of Purchase Order (without penalty) and with the prescribed penalty as per following schedule of requirement:

MODE OF PENALTY	NO OF DAYS	TOTAL DELIVERY PERIOD
Without Penalty	45 days	45 days
With Penalty @ 0.5 % per day on the delayed completion of task	50 days (5 days after 45 days)	50 days (45 + 05)

**PRICE SCHEDULE FOR THE EQUIPMENT ON PAK RUPEES BASIS:**

Name of Bidder: \_\_\_\_\_

The Equipment to be completed is tabulated as under:

S. No.	Item (s)	Qty	Unit price (Rs)	GST (Rs) 17%	Total Cost including GST(Rs)	Bid Security (2% of the Total Cost)
1.						
2.						
3.						

**PRICE SCHEDULE FOR THE EQUIPMENT ON CNF BASIS:**

Name of Bidder: \_\_\_\_\_

S. No.	Item(s)	Qty	Currency Type	Unit Cost (CNF)	Total Cost	Bid Security (2% of the Total Cost)
1.						
2.						
3.						

Signature of the Bidder: \_\_\_\_\_ Stamp of Bidder: \_\_\_\_\_

Note: In case of discrepancy between unit price and total, the unit price shall prevail.

Issued by: Prof. Dr. Saeed Ahmad  
Project Director (SAUG)



**UNIVERSITY OF ENGINEERING AND TECHNOLOGY TAXILA**  
**(STRENGTHENING AND UP-GRADATION OF UNIVERSITY OF**  
**ENGINEERING & TECHNOLOGY AND ITS SUB-CAMPUS)**

Phone: 92-51-9047633 Fax: 92-51-9047797

*Tender Document*  
*Part (3): Specifications*

Sr. No.	Nomenclature / Specification	Quantity
1.	<p><b>Water &amp; Wastewater Sampler</b>            Operating Temperature: 32° F to +158°F (0° to +70°C)  <b>Materials:</b>            Enclosure: Expanded UV protected PVC            Bottle: 2.5 gallon Polyethylene            Pickup Hose: 15' reinforced PVC 1/4" ID polyethylene flexible tubing section with intake strainer            Pump Tubing: Norprene 1/4" ID, 7/16" OD            Sample Pump:            Flow Rate: 1000 ml per minute at a 4 foot head            Type: Peristaltic            Maximum Lift: ~20 feet            Battery: Rechargeable 5 AH Gel Cell            Battery Life: ~1 hour, continuous pumping under load            Standby: 3 months while still retaining enough power to run the pump to capacity            Start Delay: 16 time settings from 0 to 12 hours            Composite Interval: 15 time settings from 5 min. to 12 hours plus an External Trigger mode setting            Sample Size: 15 composite sample sizes from 50ml to 2 liters plus a Full Bottle discrete setting (Approximate sizes at 4 foot head)            External Trigger Input: 250mS minimum pulse width            Switch closure or 4-24VDC            Pulse Output: 5VDC one-second pulse            1000ohm output impedance            Bottle Switch Input: Switch closure Input            Floating switch in bottle            Rain and Water Sensors: moisture sensors or switch closure inputs            Internal Fuse: 10A Slow-Blow            Size of unit: 22x17x9 inch (56x43x23 cm) (HxWxD)</p>	2
2.	<p><b>Pilot Water Filtration Plant</b>            Flow meter: 0...1000 ltr/h            Turbidimeter: 0...50NTU            Centrifugal pump: max. flow rate 1000ltr/h            Solenoid valves, piping, pump made of corrosion            Collecting tank capacity 150ltr each and all accessories to make it functional.</p>	1
3.	<p><b>Portable TSS Apparatus</b>            Measuring range 0.001 to 400 g/L            Operating Temperature Range 0 to 60 °C            And all other accessories</p>	1
4.	<p><b>Atomic Adsorption Spectrometer (AAS)</b></p>	1

Sr. No.	Nomenclature / Specification	Quantity
	Wavelength range: 190-900 nm Inflamer: All-metal titanium burner Atomizer: Effective glass atomizer Power source: 220V±22V AC Flame system : Acetylene air burner, Nitrous oxide acetylene flame Safety system: Can automatically cut off the gas when the pressure is not enough, the power is off, flameout and unconformity of the burner. Temperature : up to 3000°C Lamps: mini eight lamps To measure the trace element of sample (Quote all types of trace elements) with all accessories to make it functional Country of Origin: UK / Japan	
5.	<b>Flame Photometer</b> With 5 channels and be able to detect K, Na, Li, Ca, Ba (5 elements). With K, Na, Li, Ca, Ba five filters, which can detect three kinds of elements, show three kinds of element content simultaneous. Standard accessories: air-compressor, PC software or micro-printer. LCD Display, touch panel with numeric keypad. Single point calibration & calibration curve can be saved. RS232 interface, external computer or printer. With a mist separator. Measurement Range      K: 0-100ppm; Na: 0-100ppm; Li: 0-100ppm; Ba: 0-3000ppm Sample Rate:                4 ~ 6ml/min Response Time:              < 8s Time Stability :              Less than 15 seconds (when the sample was taken after the flame) Calibration Methods :              Straight line, broken line, secondary fitting with all accessories.	1
6.	<b>TOC Analyzer</b> Measurement Range : TC:0 to 3500 & IC:0 to 3500 Detection Limit : 0.5 µg/L Measuring Time: 2 – 3 Min Sample Injection      Automatic Injection Sample Injection volume      350 to 20400 µl variable IC pre-treatment      Automatic internal acidification and sparging Automatic dilution      Dilution factor 2 to 50 Gas Consumption      Approx 3000 L/month (NPOC) (operating conditions: 8 hours/day x 5 days/wk)  With PC and Gas Cylinder and all accessories to make it functional.	1
7.	<b>BOD Reactor</b> It should include; <ul style="list-style-type: none"> <li>• Greaseless bottle seals</li> <li>• Larger graphic display screen</li> <li>• Improved stirring</li> <li>• Smaller footprint</li> <li>• Improved procedures with expanded options</li> <li>• Bottle fences to prevent tipping of bottles and provide tubing management during storage</li> <li>• Auto-switching power supply</li> <li>• Improved temperature control</li> </ul> With complete accessories.	1
8.	<b>DO meter</b> Display: Dual LCD	1

Sr. No.	Nomenclature / Specification	Quantity
	Range: 0.00 to 20.0 mg/L (ppm) Saturation: 0.0 to 200.0% Temperature: 0.0 to 50.0°C Resolution: DO: 0.01 mg/L Saturation: 0.1% Temperature: 0.1°C Accuracy: DO: + 1.5% full scale Saturation: + 0.5% full scale Temperature: + 0.1°C Salinity Compensation: Range: 0.0 – 50.0 ppt Resolution: 0.1 ppt Barometric Pressure Compensation: Range: 555 – 808 mm Hg Resolution: 1 mm Hg Temperature Compensation: Automatic from 0 – 50°C - Probe: Galvanic with 10 ft. cable - Memory: 16 data-points - Power: Battery on AC Adapter	
9.	<b>Electric Shaker</b> Microprocessors PID control maintaining constant speed with clamps for 1000ml Flask / beaker Wide speed range: 30 to 500 rpm Digital timer with Delayed ON/OFF function: ranging from 1min to 99 hr 59 min. Intuitive, splash-proof, and easy-to-clean control panel with a vivid and colorful vacuum fluorescent display (VFD), touch sensitive buttons, and a dial knob. Automatic adjusted shaking speed when load imbalance or unusual vibration is detected by the sensor with all accessories	1
10.	<b>Oil Content Analyzer</b> Measurement principle: Solvent extraction, NDIR analysis (Infrared spectroscopy) Measurement range: 0mg/l - 200mg/l dynamic ranging Resolution 0 to 99.9 mg/L; 0.1 mg/L , 100 to 200 mg/L; 1 mg/L Repeatability 0 to 9.9 mg/L; ± 0.2 mg/L ± 1 digit 10.0 to 99.9 mg/L; ± 2 mg/L ± 1 digit 100 to 200 mg/L; ± 4 mg/L ± 1 digit Measurement Automated mixing, filtration and measurement Calibration One touch calibration after the calibration standard is introduced to the instrument Display Measured value; 3 digits LCD with backlight Message; Character display LCD with back-light (16×2 characters) Functions Data memory up to 50 data points, Self diagnostics, Stable type display, Interactive operation, Calendar clock Output RS-232C, parallel printer port RS-232C, parallel printer port Ambient Temperature 0 to 60 °C Dimensions 200(W)×315(D)×342(H) mm	1
11.	<b>Digital Electronic Microscope</b> Microscope with 50000X and 5000X resolution power, LCD display.	2
12.	<b>Bench top Plate/colony Count Apparatus</b>	1



Sr. No.	Nomenclature / Specification	Quantity
	Optics magnified 8X,transmission reflection illuminate, Counting scope 0-9999, power; 10W,the size of culture case; 90mm or less.	
13.	<b>Digital Balance</b> Weighing capacity up to 200 kg.	1
14.	<b>Incubator</b> For drying, baking, annealing, conditioning, sterilizing, evaporating, and dehydrating. Factory-tested. Sturdy welded steel construction. Ample insulation. Two nickel-plated shelves adjustable at 12.7 mm (0.5") increments. Thermostatically controlled with damper-controlled, gravity convection air circulation. Red pilot light indicates heater action. Graygreen, hammerloid, baked enamel finish. Three-wire cord and plug standard.  Capacity / Volume = 1 m <sup>3</sup>	1
15.	<b>Environmental Light Meter</b> For both indoor & outdoor purposes Illumination Accuracy at 23°C ± 5°C (73.4°F ± 5°F), < 75% R.H. Sensor Silicon photodiode and filter Measurement rate 2.5 times per second Range 20, 200, 2000, 20000, 200000 Lux 20, 200, 2000, 20000 Foot candles Accuracy ± 3% (Calibrated to standard incandescent lamp at 2854°K) 6% other visible light sources Angle deviation from cosine Characteristics 30° ± 2% 60° ± 6% 80° ± 25% Cosine Angular corrected per JIS C 1609:1993 and CNS 5119 general A class Resolution 0.01 fc/lux General Specifications Display 3¾ digit liquid crystal display (LCD) with a maximum reading of 1999 Zero Automatic Temperature / Humidity Operating -10°C to 50°C (14°F to 122°F), 0 to 80%RH Storage -10°C to 50°C (14°F to 122°F), 0 to 70%RH Altitude 2000m, indoor operation With all accessories	2
16.	<b>Digital Noise Meter</b>  Should meet the measurement requirements of Safety Engineers, Health, Industrial safety offices and quality control in various environments. ■ A and C weightings for checking compliance with safety regulations as well as acoustic analysis ■ Measuring ranges: A Weighting 30 ~130dB C Weighting 35~130dB ■ Frequency range: 31.5Hz~8KHz ■ Display with 0.1dB steps on a 4 digits LCD ■ Slow (1 sec) and fast (125ms) response settings to check peak and average noise levels ■ MAX/MIN recording ■ Data Hold to freeze reading on digital display ■ Accessories supplied: Carrying case, windscreen, user manual and 9V Battery & all accessories	3
17.	<b>Complete Weather Station</b>	1

Sr. No.	Nomenclature / Specification	Quantity
	<p><b>Wind speed and direction sensors</b></p> <p>3-cup anemometer. Reed pulse output. Aluminium body. IP65 rating. Complete with 4-pin IP65 connector for wiring (cable not included). Supplied with test certificate.</p> <p><b>Wind vane.</b> Output 0-1V. Power supply 12Vdc, 10mA. Hall effect position transducer. Aluminium body. IP65 rating. Complete with 4-pin IP65 connector for wiring (cable not included). Supplied with test certificate.</p> <p>Cable 6x0,5 + shield. External: polyurethane (price per meter)</p> <p>"T" coupling bar for anemometers diam. 50mm, complete with fitting for radiant shield and pyranometer supports</p> <p>Thermohygrometers natural ventilation versio</p> <p>Ambient temperature and Relative humidity probe. Output: Pt100 (temperature) + 0-1V (RH%). Power supply 12 Vdc, cable L.5 m. included. Supplied with Calibration certificate.</p> <p>Natural ventilation radiant shield. Compatibility with DYA046 arm.</p> <p>Barom ter</p> <p>Barometer Meas.Range: 800-1100 hPa. Output: 0-1Vcc. 12Vdc Power supply. Supplied with Calibration Certificate.</p> <p>Rain gauge 324 cmq</p> <p>Aluminium tipping bucket rain gauge. 324 sq.cm inlet area. 0.2mm resolution. Supplied with Calibration Certificate.</p> <p>Cable L= 10 m with connector for analogue output sensors</p> <p>Ground base for rain gauge installation</p> <p>Poles, Ø 5 cm for sensors installation</p> <p>2m meteo pole (Stainless steel AISI304). Ø 5 cm.</p> <p>Base for meteo poles Ø 50 mm fitted on cement plinth</p> <p>Set of n.3 anchoring bolt for pole bases</p> <p>Set of n. 3 pickets L.1 m</p> <p>Set of n.3 tie-rods for meteo poles</p> <p><b>E-Log dataloggers</b></p> <p>E-Log Environmental Datalogger. N.12 inputs (n.8 analogue, n.2 impulse, n.2 on-off). N. 6 digital outputs. N. 20 programmable intervention logics. 16 bit A/D converter. 2 Mb memory. 12 Vdc power supply. N. 2 RS232 serial interfaces. GPRS, GSM and Modbus RTU communication protocols. Complete with L.2 m cable and USB/RS232 converter. Removable terminal blocks for wiring. Complete with SW 3DOM for</p>	

Sr. No.	Nomenclature / Specification	Quantity
	<p>programming and data download.</p> <p>IP65 protection box, wall or pole installation for E-Log and accessories (Data sheet MW8012)</p> <p>IP65 box 300x400 mm. Includes 2Ah rechargeable battery and 220VAC/24-13,8 V (50W) power pack.</p> <p>Pole (diam. 50 mm) mounting arm for IP65 protection box 300x400 mm. With complete accessories &amp; Installation of weather station.</p>	
18.	<p><b>Digital CO Analyzer (for both indoor &amp; outdoor purposes)</b>  Temperature : Operating Storage 0° to +50° C  -30°C to +60°C</p> <p>Operating Humidity 0-99% relative humidity (non condensing)</p> <p>Measurement Range 0 to 1000 PPM</p> <p>Measurement Resolution 1 PPM for 0-200 PPM; 5 PPM for 500-1000 PPM</p> <p>Accuracy 3% or ±2 PPM</p> <p>Recovery time from max concentration (&lt;1000 PPM) 10 seconds</p> <p>Sensor type Stabilized electrochemical. Gas-specific (CO)</p> <p>Warm up/Self test Period 10 seconds</p> <p>With all accessories</p>	1
19.	<p><b>Digital CO<sub>2</sub> Analyzer (for both indoor &amp; outdoor purposes)</b></p> <ul style="list-style-type: none"> <li>• Easy to read LCD digital display</li> <li>• Compact, lightweight and easy installation</li> <li>• Highly reliable non-dispersive infrared detection method</li> <li>• Recorder output signal</li> <li>• Automatic control of ventilation systems</li> <li>• Alarm contact output provided</li> <li>• Diffusion or sample draw versions</li> <li>• Meets ASHRAE 1969 IAQ Standard of 2,000 ppm max PEL</li> <li>• Detection of CO<sub>2</sub> for NFPA 12 Regulations-CO<sub>2</sub> storage tank leaks</li> </ul> <p>With all accessories</p>	1
20.	<p><b>Digital NO<sub>x</sub> Analyzer</b></p> <p>Precision and Accuracy Higher of 1.5 ppb or 2% of reading</p> <p>Data Storage 14,336 lines (10 s avg. = 1.4 days; 5 min avg = 1.4 mo.)</p> <p>Time/Measurement 10 s (Data averaging options: 10 s, 1 min, 5 min, 1 hr)</p> <p>Sample Flow Rate 1 L/min</p> <p>Data Outputs RS-232, LCD, 0-2.5 V Analog, 4-20 mA Optional, Flash Card Optional</p> <p>With all accessories</p>	1
21.	<p><b>Traffic Volume Counter</b></p> <p>Measurement with integrated radar detector</p> <p>Collection of single data for 360,000 vehicles:</p> <ul style="list-style-type: none"> <li>- number of vehicles</li> <li>- direction</li> <li>- speed</li> <li>- vehicle classification (e.g. 2 wheelers, cars, vans, trucks, semitrailers)</li> <li>- distance in seconds</li> <li>- date</li> <li>- time</li> </ul> <p>Adjustable for approaching traffic, leaving traffic or both directions 6 vehicle classes 10 speed classes</p> <p>data interface RS 232 (optional USB adapter)</p> <p>speed range from 1 mph to 159 mph / 1 km/h to 255 km/h</p> <p>carrying handle</p> <p>With all accessories</p>	1

Sr. No.	Nomenclature / Specification	Quantity
22.	<p><b>Digital Particulate Analyzer PM10, PM-5 and PM-2.5</b>  Six channels and a particle size range of 0.3 µm to 10 µm</p> <ul style="list-style-type: none"> <li>• Ultra-lightweight and ergonomic design for easy single-hand operation</li> <li>• Ten hours of standard-use battery life to last a full work day</li> <li>• Large 3.5 inch QVGC color display with backlight, intuitive icons, and large font options make for easy navigation and viewing</li> <li>• 10,000 records stored in device for easy access to historical data</li> <li>• Data should be viewed in traditional tabular or trend graph at the user's preference</li> <li>• Configurable display, sample methods, and alarm setting for sample size count (raw count, per cubic feet, cubic meter, or liter)</li> <li>• Data export to USB memory stick or direct connection to PC via USB cable.</li> <li>• Ethernet enabled for accessing data via internet browser (Windows Explorer, Safari, and Firefox)</li> </ul>	1
23.	<p><b>Air Sampler for PM10, PM-5 and PM-2.5 including filters</b>  This Portable, Maintenance-Free, Variable Speed, High Volume, Brushless Blower Air Sampling System for continuous or intermittent sampling with variable flow range.</p> <p>Filters for PM10, PM2.5 &amp; PM 5 measurement.</p>	1
24.	<p><b>Indoor Air Quality Meter</b>  Digital meter for the measurement of indoor air quality.</p>	1
25.	<p><b>Digital Analyzer for SO<sub>x</sub></b></p> <p>Range : Any Range from 0-2000PPM SO<sub>2</sub>  Resolution : 1PPM  Response Time : 20 – 30%</p>	1
26.	<p><b>Digital Ozone Analyzer</b></p> <p><b>Measurement Principle</b> Titration of NO with Ozone with Detection of Ozone Depletion by UV Absorption at 254 nm  <b>Precision and Accuracy</b> Higher of 1.5 ppb or 2% of reading  <b>Data Storage</b> 14,336 lines (10 s avg. = 1.4 days; 5 min avg = 1.4 mo.)  <b>Time/Measurement</b> 10 s (Data averaging options: 10 s, 1 min, 5 min, 1 hr)  <b>Sample Flow Rate</b> 1 L/min  <b>Data Outputs</b> RS-232, LCD, 0-2.5 V Analog, 4-20 mA Optional, Flash Card Optional  <b>Power Requirements</b> Typical: 11.4 watt  Maximum: 22.3 watt (warmup)  <b>Size</b> 13.3 x 8.3 x 5.3 x in  33.7 x 20.0 x 13.3 cm</p>	1
27.	<p><b>Digital H<sub>2</sub>S Analyzer (631-X or Equivalent)</b>  Range 0-100 PPM  Temperature Range: -20°C to +50°C</p>	1

**Issued by: Prof. Dr. Saeed Ahmad**  
Project Director (SAUG)



**UNIVERSITY OF ENGINEERING AND TECHNOLOGY TAXILA  
(STRENGTHENING AND UP-GRADATION OF UNIVERSITY OF  
ENGINEERING & TECHNOLOGY AND ITS SUB-CAMPUS)**

Phone: 92-51-9047633 Fax: 92-51-9047797

**Tender Notice**

1. The University of Engineering & Technology, Taxila invites bids for purchase of Laboratory Equipment on CIF and Pak rupees basis for Department of Environmental Engineering, Industrial Engineering, Electrical Engineering, Mechanical Engineering and Electronics & Mechatronics Engineering from authorized distributors / sales agents. The details of equipment including specifications are provided in the Tender document(s).
2. The Tender Document(s) can be purchased on Payment of Rs. 5000/- in Habib Bank, Branch UET Taxila on prescribed Challan Form.
3. Tender Document(s) can also be downloaded from official website of UET, Taxila ([www.uettaxila.edu.pk](http://www.uettaxila.edu.pk)) or can be obtained from the office address below. The Bidders may visit the office of Project Director (SAUG) during working hours of University.
4. The Bids (Technical & Financial) on single stage two envelope basis should reach the undersigned not later than **11:00 am on 03.02.2014**. The bids will be opened on same date at 12:00 noon in the presence of bidders.

**Prof. Dr. Saeed Ahmad  
Project Director (SAUG)  
University of Engineering & Technology, Taxila  
Phone: (051) 9047633 Fax: (051) 9047797  
Email: [dr\\_sahmad@yahoo.com](mailto:dr_sahmad@yahoo.com)**