

**DOCUMENT****Open Competitive Bid (OCB)****For****Supply and Installation of Equipments  
To the Material Processing Lab of MME Department.  
at the three campuses of  
Rajiv Gandhi University of Knowledge Technologies****Proprietary & Confidential****RAJIV GANDHI UNIVERSITY OF KNOWLEDGE  
TECHNOLOGIES****Ground Floor, Vindhya C4 Building,****IIT-H Campus, Gachibowli****HYDERABAD- 500 032****Phone: 040-23001830****Tender Ref: RGUKT/Proc/MME/MPL/T34/2012****Phone: 040-23001830**

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**Contents**

Description	Page No.
Newspaper advertisement	4
Time Schedule	5
Tender Form	6
Statement of important limits and values of bid	7-8
Eligibility Criteria	9-10
Requirement and Technical Specifications	11-17
Check List	18

**News paper advertisement****Tender Notice****RAJIV GANDHI UNIVERSITY OF KNOWLEDGE  
TECHNOLOGIES****Ground Floor, Vindhya C4 Building, IIIT-H campus,  
Gachibowli, HYDERABAD- 500 032****Phone: 040-23001830**

Separate Sealed Tenders are hereby invited from reputed Manufacturers or Authorised dealers for supply and installation of equipments for the following labs of Metallurgy and Materials Engineering Department at the three campuses of RGUKT located at Basar(Adilabad District), Nuzvid(Krishna District) and RK Valley (YSR Kadapa District) of Andhra Pradesh:

- i. Materials Processing Laboratory
- ii. Physical Metallurgy Laboratory
- iii. Corrosion and Environmental Degradation Laboratory
- iv. Materials Characterization Laboratory
- v. Materials Testing Laboratory

**Last date of submission of tender along with EMD as specified in the bid document is on 19.03.2013 before 04.00 pm.**

**Interested parties can collect the Tender document for each laboratory separately from the office of the RGUKT from 09.03.2013 to 19.03.2013 up to 03.00PM against payment of Rs. 1,000/- towards the cost of each Tender document fee (non-refundable) through D.D. drawn from any Nationalized Bank, in favour of "REGISTRAR, RGUKT" payable at Hyderabad. For further details, visit our website [www.rgukt.in](http://www.rgukt.in)**

**Date: 09.03.2013****Sd/-  
Registrar**

**Time schedule of various Short tender related events**

Bid calling date	09.03.2013
Sale of document	From 09.03.2013 to 19.03.2013 up to 03:00 P.M
Pre bid meeting	13.03.2013 at 04.00PM
Bid closing date/time	19.03.2013 at 04:00 P.M.
Technical Bid Opening date/time	19.03.2013 at 04:30 P.M.
Price Bid opening date/time	20.03.2013 at 04:00 P.M.
Bid Document fee	Rs.1,000/-
Contact person	Registrar, RGUKT
Reference No	RGUKT/Proc/MME/MPL/T34/2013

**Note:** Tender documents purchased bidders are only allowed to participate in Pre-Bid meeting.

Registrar,  
RGUKT.

**TENDER FORM****Not transferable**

Reference. No. RGUKT/Proc/MME/MPL/T34/2013      Dated 09.03.2013

**Subject:** Invitation of Tenders for Supply, installation and commissioning of Material Processing Lab Equipments to the MME Department at three campuses of RGUKT located at Basara (Adilabad Dist), Nuzvid (Krishna Dist) and RK Valley (YSR Kadapa Dist) of Andhra Pradesh.

Last date and time for submission of the TENDER AT RGUKT, Vindhya-C4, IIIT Campus, Gachibowli, HYDERABAD is **19.03.2013 up to 4:00PM**

Dear Sir/Madam,

- A. RGUKT invites sealed tenders comprising technical bid and price bid separately from reputed manufacturers (or) authorized dealers for its three campuses located at Basara (Adilabad Dist), Nuzvid (Krishna Dist) and R K Valley (Kadapa Dist) of Andhra Pradesh.
- B. The Tender form consists of 35 **pages of which pages from 7 to 18** are instructions and **page No.26** contains the format for financial bid. The duly completed Technical Bid together with a copy of the bid document (this tender) signed on all pages by the Bidders authorized signatory and the Price Bid should be kept in separate sealed covers. These sealed covers must be submitted in a sealed master envelope super scribed "Tender for Supply, Installation & Commissioning of Material Processing Lab Equipments to the MME Department at the three campuses of RGUKT. The last date for submission of bid is **19.03.2013 and closing time is 04:00 PM.**
- C. The Sealed Tenders should be deposited in the Tender box kept in the office of Registrar, RGUKT, Hyderabad up to **04:00 P.M. on 19.03.2013.**

For any clarification and further details on the above tender please contact by Telephone No: 040-23001830 or Contact in Person during office hours.

Thanking you

Yours faithfully,

Registrar,  
RGUKT.

**STATEMENT OF IMPORTANT LIMITS/VALUES RELATED TO BID**

<b>Item</b>	<b>Description</b>
EMD	<b>Rs. 1,00,000/- by way of Demand Draft from any Nationalised Bank or by way of irrevocable bank guarantee from any Nationalised Bank only. DD/BG from other than Nationalised Banks will not be accepted.</b>
Bid Validity Period	90 days from the date of opening of Financial bid
EMD Validity Period	90 days from the date of opening of Financial bid
Warranty Period	3 years Comprehensive Warranty
Variation in quantities/number of residents	<b>± 40 %</b>
Period for furnishing performance Security Deposit	Within 10 days from date of receipt of award
Delivery Schedule	Bidder shall deliver the goods in one single lot within 30days from the date of award of the contract.
Performance security value	5% of contract value by way of irrevocable Bank Guarantee from any Nationalised Bank
Performance security validity period	38 months from award of contract ( including 30 days of installation period)
Period for signing the order Acceptance	Within 7 days from date of receipt of notification of award

<b>Payment terms</b>	
On delivery at user site	<p>Payment for goods and services shall be made in Indian rupees as follows.</p> <ol style="list-style-type: none"> <li>1. 80% of payment will be paid after installation, commissioning</li> <li>2. Balance 20% will be paid after 3 months after obtaining the satisfactory certificate from the Director, RGUKT IITs.</li> </ol>
Maximum Liquidated Damages for late deliveries	<p>For delays:- If the supplier fails to deliver any (or) all of the goods or perform the services within the time period specified in the contract the purchaser shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damages a sum equivalent to 0.25% of the contract value per day until actual delivery or performance up to a maximum deduction of 10% of the delayed goods or services contract price. Once the maximum deduction is reached, the purchaser may consider the termination of the contract duly forfeiting the performance security etc.,</p>



**ELIGIBILITY CRITERIA**

- 5.1. This bid is open to all firms within India who are eligible to do business under relevant Indian laws as in force at the time of bidding, subject to meeting the pre-qualification criterion. They should provide list of customers of previous supply of similar/ same items to IITs, NIT's or Central Universities or any Academic Institute of National repute with contact details. Copies of orders received from the reputed firms on bidding firm need to be submitted.
- 5.2. The bidder should have servicing facility or work shop with in India so the provision of service is possible at a short notice and without incurrance of delay.
- 5.3. The Bidding firm should have minimum turnover as follows:

<b>Bid Value offered against the tender call</b>	<b>Last financial year's business turnover</b>
Up to 25 lakhs	50 lakhs
More than 25 lakhs	1 crore

The bidder should have adequate experience in supply of such materials as required in the tender. Bidder should furnish proof of having supplied such materials as required in the tender in the previous financial year ending 31<sup>st</sup> March 2012 as mentioned above . A certificate indicating the Turn Over value details (in Rupees) of subject material, during the financial year 2011-12 (for the year ending 31.03.2012) from a Firm of Chartered Accountants must be enclosed (in original) as a proof for Turnover. The Turn Over of the subject Material must be separately indicated in the certificate.

- 5.4. The bidder should furnish satisfactory performance certificate from the parties concerned to whom bulk supplies were effected, in case such supplies were made. RGUKT may contact any such parties to elicit details.
- 5.5. Bidder should be registered under VAT Act/CST Act with the relevant State Sales Tax Authorities. He should furnish along with the bid document, the relevant VAT/CST Registration Document and PAN / TAN Card copies.
- 5.6. All bidders shall also include the following information and documents with their tenders ( in the Technical bid cover)
- 5.6.1. Copies of original documents defining the constitution or legal status, place of registration, and principal place of business of the bidding firm/entity; written power of attorney of the signatory of the Bid to commit the Bidder.

**Web document**

- 5.6.2. Machinery/equipment owned by the bidder and number of employees.
  - 5.6.3. Latest Income Tax returns and **VAT/ CST** Returns filed.
  - 5.6.4. List of Present Clientele with contact addresses & telephone numbers.
- 5.7. All the certificates furnished along with technical bids should be attested by a Gazetted Officer, counter signed by bidder along with their seal.

The bidders must submit all relevant documentary evidence to support their claim for eligibility in placing bid. **The tenders received without the above documents will be rejected.**

## Requirement of Material Processing Lab equipments

Sl. No	Equipment	Qty for three Centers
1	FCAW/MIG/MAG WELDING UNIT	3
2	FRICTION STIR WELDING UNIT	1
3	LABORATORY DOUBLE HEADED ROLLING MILL	3
4	PLANETARY MILL	3
5	50 TON HYDRAULIC POWDER COMPACTING PRESS COMPRESSION	3

### 1. FCAW/MIG/MAG WELDING UNIT

#### Features

- The offered equipment shall be suitable for semiautomatic FCAW/MIG/MAG welding process using flux-cored and solid wires of carbon steel, low-alloy steel and stainless steel.
- The equipment shall be suitable for welding in all positions with pure argon, carbon-di-oxide or argon plus carbon di-oxide gas mixture as shielding gas and also for welding with self-shielded flux-cored wires.

#### Configuration

It shall consist of

- 1) Welding Power-source,
- 2) Wire feeder unit,
- 3) welding torch Type A,
- 4) Gas Regulators for (Ar + CO<sub>2</sub>) Gas Mixture or CO<sub>2</sub> Gas,
- 5) CO<sub>2</sub> Gas Pressure Regulator,
- 6) Flow-Meter and Heater Unit,
- 7) Set of inter-connecting cables/hoses with quick-fix end couplings,
- 8) Consumables & Spares for Welding Torches,
- 9) Electrical & Mechanical Spares for Power-source and Wire-Feeder

#### A. Power Source

- Inverter Controlled with IGBT and Constant Potential type, even with a fluctuation of  $\pm 10\%$  in the Input Voltage
- Bidder shall indicate the Switching Frequency of the Inverter Circuit and the maker of IGBT used
- Current rating: 400 Amps. @ 60 % Duty Cycle with suitability for working at a minimum of 300 Amps. At 100% Duty Cycle.
- Operating Range : a) Voltage - 20 Volts to 50 Volts (continuous control)  
b) Current -50 Amps. To 400 Amps. (Continuous control)

- Power Input :  $415 \pm 10\%$  V AC, 3 Phase,  $50 \pm 2\%$  Hz, through a 3 Wire System [4th wire for EARTHING] – No Neutral Conductor
- Provision of one Single Phase AC tapping point in the Power source, for the gas heater input power supply [ 230 V – AC Supply]
- Auxiliary Power for Wire-Feeder Unit : Low voltage (like 48 V/110V) auxiliary power tapping point in the Power source
- Weld Stop Condition : No globule formation at the wire tip , at the time of weld stopping
- Gas Flow Setting: Gas Flow Check Push Button for Gas Solenoid Valve actuation in weld switch in “OFF” position.
- Compulsory Features : The Power source shall have Features like a) Gas / Wire Inching Facility, b) Spatter Control Facility, c) Gas Pre-flow / Post-flow Facility, d) Crater Control & Fill
- Insulation: Class "H" preferred – Tropical Working Conditions
- Machine Cooling Forced Air Cooling with interlock for tripping of the welding machine.
- Power source protection: a) Inbuilt protection for the IGBT/Power-source against Thermal / Overload / Short-Circuit conditions., b) All PCBs shall be sprayed with mould coating to prevent damage from dust and grinding particles., c) Machine Design to ensure proper earthing for the machine and its peripherals, d) Measures to nullify the effects of Electro-Magnetic Induction
- Power Source Model: Bidder has to specify the Model of Power-source Offered.

#### **B. WIRE-FEEDER UNIT**

- Burn-Back Control Compulsorily to be provided
- Wire Sizes/Solid 0.8 mm to 1.6 mm (Solid Wires)
- Wire Sizes/Cored 1.0 mm to 1.6 mm (Self-Shielded and Flux Cored Wires also)
- Wire Feed Speed 1.0 to 18.0 mtrs. / min.
- Wire Spool Weight Facility to hold wire spools of 5 to 10 kgs. Of weight and spool diameter of 300 mm
- Brake Torque on Wire Feeder Hub Shall be of adjustable.

#### **C. WELDING TORCH**

- Make: Reputed brand like OTC / DAIHEN / DAIDEN (JAPAN)
- Type Goose-Neck, Gas cooled
- Shielding Gas CO<sub>2</sub> , Argon or Mixture of CO<sub>2</sub> & Argon
- Wire Sizes/Solid 0.8 mm to 1.2 mm
- EE.6 Wire Sizes/Cored 1.2 mm to 1.6 mm (Self-Shielded / Flux-Cored Wires)
- Wire Material Carbon & Low Alloy Steel, Stainless Steel, Aluminum
- Torch Type A) – Rating 300 / 350 Amps. @ 60 % Duty Cycle Torch with 3.0 meter long cable.

#### **D. GAS REGULATOR, FLOW METER AND HEATER**

- To regulate CO<sub>2</sub> Gas Pressure, Flow Rate and for Heating the CO<sub>2</sub> Gas, to avoid ice formation.

- Power To draw from Single Phase AC Power Supply from Power source ( 230 V - AC)
- Pressure Gauges: Preferably 2 Nos. – To indicate independently cylinder pressure and gas delivery pressure

#### **E. MANUALS**

- Manual shall contain all instructions for machine installation and welding trial testing, in sequence.
- Manual to give general circuit diagrams, showing the interconnection of various elements and also details on PCBs [Printed Circuit Board] like tapping voltages, main electronic elements' specifications and ratings, etc.
- Manual to give other details like trouble-shooting chart, weld parameters selection for various base metals, etc.
- Master List of Parts & Spares used in the machine with Make, Model, Rating, etc. shall be provided.

#### **F. SPARES (To be quoted separately item-wise)**

Power Source: All type of Spares including IGBTs, PCBs (Printed Circuit Board) Control-Transformers, Cooling Fans, etc. recommended for 3 years of operation

- Wire-Feeder Unit: Spares such as feed-rolls (suitable for 0.8, 1.0, 1.2 and 1.6 mm dia. suitable for Solid & Cored Wires), wire-feed motor, wire guides, control PCB cards, connectors, etc. shall be offered.
- Welding Torch Consumables & Spares such as Liners & Contact Tip

#### **L. GENERAL CONDITIONS**

- Inspection: If necessary, the equipment shall be offered for inspection at supplier's works for performance evaluation by RGUKT prior to dispatch.
- Commissioning: The equipment shall be commissioned at free of cost by the supplier's representative at RGUKT's place of installation.
- Training: The Supplier's Service engineer shall give training in the Operation and Maintenance (mainly on electric/electronic troubleshooting) of the Machine for RGUKT Staff, after the successful commissioning of the Welding Machines
- The equipment shall be warranted for a period of thirty six months from the date of commissioning.

## **2. FRICTION STIR WELDING UNIT**

### **Scope**

- FSW machine should be NC based and must have features of acquisition of axial and radial forces, speed fluctuation data and online display of data. Machine will be used for both ferrous and non-ferrous materials. Machine must have high quality LM guides, spindle bearings, touch panel etc.

### Features Required

- Z axis (Axial) stroke : 90 mm or higher
- Z axis thrust: 18 kN or higher
- Z axis movement: Servo mechanism
- X axis (radial) stroke: 300 mm or higher
- X axis thrust: Not less than 2.5 kN
- X axis movement: Servo mechanism
- Y axis movement: Manual or servo-mechanism
- Spindle speed: 3000 rpm or higher
- Spindle motor: 10 kW or higher
- Servo motor: BOSCH REXTROTH or similar
- Spindle motor & drive: SIEMENS / BOSCH REXTROTH or similar

### 3. LABORATORY DOUBLE HEADED ROLLING MILL

#### Features

- Double headed Unit to facilitate rolling of sheet on one side and rod rolling on the other.
- Chilled cast iron rolls of high surface hardness
- Adjustable Screw down mechanism to keep the roll gap constant during rolling
- Gear box coupled with suitable pinion drive to transfer the drive from motor to the rolls
- Gears made of EN24
- Lubricated gear drive to eliminate the friction and noise

#### Technical specifications

1. Roll width : >150 mm
2. Roll diameter : 75- 101 mm
3. Wire grooves : 0.71 to 12 mm
4. Maximum sheet width that can be rolled : 150 mm
5. Rolls made of : Case hardened High carbon chromium steel
6. No of half round grooves : 2
7. Roll speed : One or two fixed speeds
8. Lubricating system : Automatic
9. Power input supply : 3-Phase AC 50Hz
10. Power rating : 4 to 6 H P

#### 4. PLANETARY MILL

1. Number of working station : 2 (Four), each 500 ml;
2. Useful capacity: 225 ml or higher;
3. Grinding Bowl, lid and Capacity: 2 No's. of 500 ml Zirconia bowls with Zirconia lids and 2 No's of 500 ml corundum (sintered alumina) bowls with Sintered corundum (sintered alumina) lids
4. Grinding Ball, size and No of balls : zirconia, 10 mm dia, 400 No's and Sintered corundum (sintered alumina), 10 mm dia, 400 No's
5. Additional lock-system for all grinding bowls 500 ml volume-2 No's (for the transport of the closed grinding bowl with gassing lid)
6. O-ring for gas-tight and dust proof seal
7. Maximum feed particle size: up to 10 mm;
8. Final fineness: < 1  $\mu\text{m}$  (Documentary evidence must be attached.);
9. Transmission ratio: 1: -2.19 or better;
10. Rotational Speed of main disk: 50 - 400 rpm or better;
11. Compensation of unbalance of all grinding bowls using a compensation mechanism which is easy to operate;
12. Cooling of the grinding chamber with a built-in fan for long grinding times.
13. RS232 interface
14. Programmable interval and break times and rotation direction (clock wise & anti clock wise)
15. Safe lock clamping system; Grinding in Dry and wet conditions;
16. Main disc diameter  $\geq 250$  mm;
17. Warranty: 3 years

## 5. 50 TON HYDRAULIC POWDER COMPACTING PRESS COMPRESSION

### Features:-

- The press should be double acting type.
- It should die cushion/ejection arrangements.
- Ejection cylinders from the bottom for the pressed part.
- Adjustable tonnage of compaction.
- Rate of compression variable between.
- Suitable hydraulic power pack integrated with the actuators of the press by PLC control and sensors.

Capacity (tonnage)-	50 Ton
Plate size	300mm×300mm
Delight	300mm
Stroke	250mm
Bore	180mm
Motor H.P	5
Max.working pressure	200

## 7. General Requirements & Qualification Criteria

- ❖ Bidding Firm offering the product should have ISO 9001 Accreditation certification.
- ❖ Bidding Firm, offering the product, should have supplied similar type of test systems for a several years to government establishments, defense organizations & National higher learning institutions like IITs, IISC etc., in India
- ❖ Bidding Firm offering the product should submit list of supplies made by it, during last two years with complete contact details of the end users such as phone number, fax number, e-mail ID etc. It should submit copies of order placed by such organizations and user certificates for goods of same/similar nature.



- ❖ Bidding Firm offering the Product should have a Local Service Support Facility, preferably in Hyderabad, and should submit address and contact details
- ❖ Bidding Firm should give an Undertaking that, un interrupted service support will be given for a minimum period of 10 years with unbroken availability of spares supply.
- ❖ Bidding Firm should give an undertaking that, the Software upgrades if any, during the warranty period of three year, should be supplied free of charge
- ❖ Bidding Firm should offer pre-dispatch inspection free of charge at their factory premises for 2 users for 3 days and post installation training at our three laboratories in different campuses to 2 users for 5 days.

**NOTE**

**A complete set of bidding documents may be purchased by interested bidders from the RGUKT contact person upon payment of the bid document price which is non-refundable. Payment of bid document price should be by demand draft drawn from any Nationalized Bank only in favour of “Registrar, Rajiv Gandhi University of Knowledge Technologies” and payable at Hyderabad (India).**

- ❖ Tender documents purchased bidders are only allowed to participate in Pre-Bid meeting.**