



Phone: Off: 2458471-5 Lines Telegram: "**UNIVERSITY**" Fax: 0452 2459181 E.Mail: <u>mkuregistrar@rediffmail.com</u>

MADURAI KAMARAJ UNIVERSITY

(University with Potential for Excellence)

"Open Tender called for the purchase of "Supercapacitor Fabrication Unit consisting of 1. Glove Box, 2.Analytical Balance for Electrode Weighing, 3. Coin Cell Crimping Machine, 4. Automatic Film Coater and 5. Elecric Hot Rolling Press" to the School of Physics, Madurai Kamaraj University".

Application No.

1.	Name of the Firm	
2.	Full Address (with Pin Code &	
	Telephone /Cell Numbers)	
3.	Quoted Amount (Enclose the List if necessary)	
4.	Details of the EMD amount	Name of the Bank
	remitted	Branch
		DD No.
		Date
		Amount Rs.

Declaration

I have gone through the enclosed /above tender terms & conditions and will abide by them.

Place: Madurai Date:



(University with Potential for Excellence) <u>Tender Conditions</u>

Open Tenders are invited for the purchase of "Supercapacitor Fabrication Unit consisting of 1. Glove Box, 2.Analytical Balance for Electrode Weighing, 3. Coin Cell Crimping Machine, 4. Automatic Film Coater and 5. Elecric Hot Rolling Press" to School of Physics, Madurai Kamaraj University upto 03.00 P.M. on 15.10.2018.

Tenders are invited for the purchase of "Supercapacitor Fabrication Unit consisting of 1. Glove Box, 2.Analytical Balance for Electrode Weighing, 3. Coin Cell Crimping Machine, 4. Automatic Film Coater and 5. Elecric Hot Rolling Press" to the School of Physics, Madurai Kamaraj University up to 03.00 pm on 15.10.2018. The Tender should be from the reputed firms.

Two Cover System

Bidders should examine all Instructions, Terms and Conditions and Technical specifications given in the Tender document. Failure to furnish information required by the Bid or submission of Bids not substantially responsive or viable in every respect will be at the Bidders risk and may result in rejection of Bids. Bidders should strictly submit the Bid as specified in the Tender, failing which the bids will be non-responsive and will be rejected. The Tender should be submitted in Two Parts viz Technical Bid (Envelope-A) and Price Bid (Envelope-B) as explained below:

Technical Bid Cover (Envelope–A)

- a) The Technical Bid as per the format given in the Tender document shall be typed, signed and stamped in all pages by the authorized signatory of the Tender. Any alterations, deletions or overwriting shall be attested with full signature of the Authorized signatory of the Tender.
- b) The supporting documents and other documents as given below should be submitted in the Technical Bid.

#	Documents to be Submitted		
1.	EMD instrument shall be kept in a separate cover, sealed and superscribed as "EMD cover"		
2.	Covering letter in the Bidder's letterhead shall be enclosed.		
3.	Authorization letter in the Bidder's letterhead from the Managing Director/ Partner / Proprietor or Power of Attorney from the board of Directors of the Bidder company for Authorized Signatory of the Tender Shall be enclosed.		
4.	A full set of Tender document should be printed, signed by the authorized signatory and stamped in all pages as a token of accepting the conditions.		
5.	Technical bid should be duly filled & signed by the authorized signatory and stamped in all the pages.		
6.	All the supporting documents to establish Bidder's eligibility as required should be signed by the authorized signatory and stamped in all pages and enclosed with Technical Bid.		

- c) The Technical Bid shall not contain any indications of the Price Bid whether directly or indirectly otherwise the Bid will be summarily rejected.
- d) The EMD cover and filled Technical Bid document enclosed with supporting documents should then be put in a separate cover and sealed appropriately. The Technical Bid cover (Envelope-A) should be superscribed as "*Technical Bid (Envelope-A) purchase of "Supercapacitor Fabrication Unit" to the School of Physics, Madurai Kamaraj University" –Tender Ref: MKU/DCP/SOP/R-45.* The "FROM" address and "TO" address should be clearly written in the outer cover otherwise the BID is liable for rejection.
- f) The technical details submitted by the companies who participated in the tender will not be disclosed to any third party as the disclosure would harm the competitive position, trade secrets and intellectual property rights.

Price Bid Cover (Envelope–B)

- a) All the price items in the Tender document shall be typed, signed and stamped in all the pages by the Authorized Signatory of the Tender. Any alteration, deletions or overwriting shall be attested with full signature of the authorized Signatory. Only a single price should be quoted for each Price Bid item. The Bid is liable for rejection if price Bid contains variation clause or conditional offers or partial offers.
- b) The Price Bid shall be placed in a separate cover and sealed appropriately. The price Bid cover (Envelope-B) shall be superscribed as "*Price Bid (Envelope B) purchase of "Supercapacitor Fabrication Unit" to the School of Physics, Madurai Kamaraj University"* –*Tender Ref: MKU/ DCP/SOP/R-45.* The "FROM" address and "TO" address shall be written without fail otherwise the price Bid is liable for rejection.

Outer Cover

c) Both the Technical Bid cover enclosed with EMD cover (Envelope-A) and Price Bid Cover (Envelope –B) shall then be put in a single outer cover and sealed appropriately. The outer cover shall be superscribed as "purchase of "Supercapacitor Fabrication Unit" to the School of Physics, Madurai Kamaraj University" –Tender Ref: MKU/ DCP/SOP/R-45. The "FROM" address and "TO" address shall be written without fail otherwise the Technical Bid is liable for rejection.

Tender in sealed covers superscribed as **"Tender for purchase of "Supercapacitor Fabrication Unit"** to the School of Physics, Madurai Kamaraj University" Addressed to Dr. V. Chinniah, Madurai Kamaraj University, Madurai - 625 021. The University will not be held responsible for the postal delay and postal transit.

The tenderer should enclose an attested xerox copy of the commercial tax certificate regarding GST number. The supply should be made within 30 days from the date of receipt of supply order.

The rates quoted by the firm should be valid for a period of one year from the date of acceptance of tender and no escalation of rates will be allowed under any circumstance. A crossed demand draft for 1% EMD to the total cost value should be drawn in favour of the Project Investigator, DST-MES Project, School of Physics, Madurai Kamaraj University, Madurai should accompany the Tender.

The successful tenderer should supply the "Supercapacitor Fabrication Unit" to the School of Physics, Madurai Kamaraj University. If the successful tenderer fails to execute the above supply as per the schedule and satisfaction of the authorities, the resultant excess expenditure that will be there after incurred for the purchase of "Supercapacitor Fabrication Unit", will be recovered from the tenderer apart from forfeiting the E.M.D amount. If any tender is withdrawn, the Earnest Money Deposit of the tenderer will be forfeited.

The Registrar is under no obligation to accept the lowest or any tender and reserve himself the right to accept or reject any tender in whole or in part without assigning any reason and tender will be accepted only on those conditions. The Registrar reserves the right to accept or reject any tender without assigning any reason. Tenders should be addressed in the name of **Dr. V. Chinniah**, **Madurai Kamaraj University, Palkalai Nagar, Madurai-625021** and should be in sealed covers by Registered Post with acknowledgement due or in person. Tenders received in ordinary covers without seal will not be considered.

The Tender cover should be superscribed as **"Tender for purchase of of "Supercapacitor Fabrication Unit" to the School of Physics, Madurai Kamaraj University".** Any Tender received after the due date and time will summarily be rejected. The Tender will be opened by the Registrar or any other officer authorized by him in the presence of Tenderers or their authorised agents who may be present at that time. The date and time of opening the Tenders will be informed to the Tenderers.

Palkalai Nagar, Madurai-21. Date: 26.09.2018 Dr. V. Chinniah REGISTRAR

Configurations of Supercapacitor Fabrication Unit (Consist of the following equipment):

1. Glove Box:

Single station/ port glove box with following features and facilities:

- single operation, integrated with a single column purification unit
- PLC touch screen operation control
- Integrated vacuum pump
- with operating surface tilt and detachable safety glass front window.
- At constant temperature, a standard atmosphere, inert gas 99.999% water and oxygen index less than 1 ppm.

Other facilities Glove should contain:

Box size: (L*W*H)=1220×750×900mm, thickness : 3mm Box Material: 304 stainless steel box, acid-resisting, With two layers of shelves

- 1. With 3 KF40 backup interface and 1 power interface
- 2. Box bracket : Height:900mm
- 3. Main pipe : Stainless steel material, DN40
- 4. Cycle valve : Electronically controlled pneumatic vacuum bellows sealed valve, DN40

- 5. Bigger transitive cabin : ϕ 360*600mm or better Automatic valve control air extracting and inflating
- 6. Smaller transitive cabin : φ150*300mm, Manual valve to control the pumping and inflating
- 7. Box window : Transparent toughened glass, thickness of 8mm or better
- 8. Gloves interface : Stainless steel, diameter : 200mm.
- 9. Gloves : Butyl rubber material, 7B1532.
- 10. Vacuum pump : With oil mist filter, RV8
- 11. circulating fan : Flow90 m3/h,
- 12. Purifier material:Germany BASF
- 13. Water analyzer : testing range : 0-500ppm, Especially for the lithium battery manufacturing. Washed and reusable.
- 14. Oxygen analyzer : testing range: 0-1000ppm
- 15. Foot pedal

2. Analytical Balance for Electrode Weighing

Features:

- Built-in calibration weight
- Perfect Self Calibration function
- Clock Calibration function
- Built-in Clock function
- ➢ GLP/ GMP/ ISO Calibration Report
- Windows Direct function
- Interval Timer Output
- ► RS-232 I/ F
- Specific gravity measurement software
- Piece Counting function
- ➢ % display function
- Unit Conversion function
- Analog Display function

Specifications:

Technology Capacity Readability	:	Uni Bloc 82/220g 0.1mg/ 0.01mg
Volts	:	12 V DC
Std deviation	:	0.1 mg – large range < 0.05 mg – small range
Linearity	:	+/- 0.2 mg – large range +/- 0.1 mg – small range
Response time	:	3 secs. – large range 15 secs. – small range
Operating ambient Temp Temp. coefficient of sensitivity	:	5 to 40 Deg.C
(10 to 30 Deg.C)	:	+/- 2ppm/ Deg.C (When PSC is OFF)
Sensitivity stability against temp. change (When PSC is ON,		
10 to 30 Deg.C)	:	+/- 2ppm
Pan Size Body Dimensions	:	80mm dia approx. 220mmW x 330mmD x 310mmH approx.

Driving Force	Manual hydraulic pressing up to 5T	
Pressure Gauge	0-3500 psi	
Body	Stainless Steel	
Crimping Dies	Six standard die selectable: CR2032/2016/ 24XX/	
	18650 / 26650 / 32650 / AA /AAA	
Product Dimensions	330mm(L) x 240mm(W) x 400mm(H) or smaller to fit inside the Glove box	

4. AUTOMATIC FILM COATER

Coating speed	0-100mm/s, Step-less transmission Accuracy: 10mm/sec		
Facilities required	Supply with dry function, vacuum pump		
Stroke length	10 - 250 mm adjustable by using Adjustable Position Switch		
Platform	Aluminum alloy flat vacuum chuck		
Flatiorin	Vacuum Chuck Dimensions: 300mm(L) * 200mm(W)*30mm(T)		
Slicker width	0-150mm		
Slicker adjustable	0.01.2.5mm		
range	0.01-3.5mm		
Heating dry system	RT-200°C, Digital temperature controller, at 10 degree / minute		
Temperature control	±1°C		
accuracy			
Remarks	Necessary oil-less vacuum pump / heating devices or any other necessary		
	accessories required to operate the system, should be integral part of		
the system			

5. ELECTRIC HOT ROLLING PRESS

Structure Roller	 Heavy duty steel frame, gears and handle Φ100mm Dia. x 200mm width Rollers made from hardened tool steel with Cr electroplated coating Dual micrometer for accurate thickness adjustment in Range 0 -1.5mm Maximum Dimensions: 100mm(Dia.) x 200mm(W), Material: Made from hardened tool steel (HRC > 62) with Cr electroplated coating. With finish > 0.8 	
Rolling press accuracy& Speed	≤±0.005& 0-20m/min adjustable	
Rolling press thickness 0-2mm adjusted with Dial gauge		
Rolling press width& thickness	Max 200mm& 0-1.5mm adjustable	
Heating temperature	10-80 Degree Celsius	
Pressure required 3T or more adjustable		

TENDER SCHEDULE

1.	Tender inviting Authority, Designation	The Registrar	
	and Address	Madurai Kamaraj University	
		Palkalai Nagar,	
		Madurai – 625 021	
		0452-2458471	
		mkuregistrar@rediffmail.com	
2.	Name of the Work	Purchase of "Supercapacitor Fabrication Unit"	
		to the School of Physics, Madurai Kamaraj	
		University.	
3.	Tender reference	MKU/DPC/SOC/R-45	
4.	Place of Execution	Madurai	
5.	Tender documents	The Tender document can be downloaded	
		from http://mkuniversity.org till due date and	
		time of the Tender and a Demand Draft for	
		Rs.500/- + GST 18% is to be attached while	
		submitting the tender.	
6.	Earnest Money Deposit	1%	
7.	Tender submission	Up to 15.10.2018, 03.00 P.M.	
8.	Due Date and Closing Time of Tender	15.10.2018 , 04.00 P.M.	





(University with Potential for Excellence) Re-accredited with A Grade in the 3rd Cycle

TENDER NOTIFICATION No. MKU/DCP/SOP/R-45

Tenders are invited for purchase of "Supercapacitor Fabrication Unit" to the School of Physics, Madurai Kamaraj University" <u>up to 03.00 P.M. on 15.10.2018</u>. Tender schedule, conditions, specifications and other particulars may be downloaded from <u>www.mkuniversity.org</u>

The cost of Tender form

- Rs.500/- + GST 18% (Not refundable)

Last date for submitting the Tender - 15.10.2018, at 03.00 p.m.

Palkalai Nagar, Madurai – 625 021 Prof. Dr. V. CHINNIAH REGISTRAR

Date:26.09.2018





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MADURAI KAMARAJ UNIVERSITY

(University with Potential for Excellence)

"Sealed Tender for supply of Workstation" to the School of Physics, Madurai Kamaraj University.

Application No.

1	Name of the Firm	
2	Full Address	
	(with Pin Code &	
	Telephone /Cell Numbers)	
3	Quoted Amount	
	(List Enclosed)	
4	Details of the EMD amount	Name of the Bank
	remitted	Branch
		DD No.
		Date
		Amount Rs.

Declaration

I have gone through the enclosed / above tender terms & conditions and will abide by them.

Place : Madurai Date





(University with Potential for Excellence) Fenders are invited For Supply of one number of Workstation to

Sealed Tenders are invited For Supply of one number of Workstation to School of <u>Physics.</u>

Tender Conditions

Sealed Tenders are invited for the supply of one number of Workstation for to School of Physics. The Tender should be from the reputed Manufacturers/Authorised dealers.

Tender in sealed covers superscribed as "Tender for Supply of one number of Workstation" Addressed to Dr.V.CHINNIAH, REGISTRAR, Madurai Kamaraj University, Madurai - 625 021. The University will not be held responsible for the postal delay and postal transit.

The Tenderer should enclose an attested xerox copy of the commercial tax certificate regarding GST number. The supply should be made within 30 days from the date of receipt of supply order.

The rates quoted by the firm should be valid for a period of one year from the date of acceptance of tender and no escalation of rates will be allowed under any circumstance. A crossed demand draft **1% to the total cost value** should be drawn in favour of the **Project Investigator, DST-MES Project, School of Physics, Madurai Kamaraj University, Madurai** towards Earnest Money Deposit should accompany the Tender. The successful tenderer is also required to remit 4% cost of supply as security deposit for the proper fulfillment of supply and contract.

The successful tenderer should deliver the item on destination and no freight charges will be paid by the University on any circumstances. If the successful tenderer fails to execute the above supply as per the schedule and satisfaction of the authorities, the resultant excess expenditure that will be there after incurred for the purchase of the above mentioned item, will be recovered from the tenderer apart from forfeiting the E.M.D amount. If any tender is withdrawn, the Earnest Money Deposit of the tenderer will be forfeited.

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The Registrar is under no obligation to accept the lowest or any tender and reserve himself the right to accept or reject any tender in whole or in part without assigning any reason and tender will be accepted only on those conditions. The Registrar reserves the right to accept or reject any tender without assigning any reason. Tenders should be addressed in the name of **Dr.V.Chinniah**, **Registrar**, **Madurai Kamaraj University**, **Palkalai Nagar**, **Madurai-625021** and should be in sealed covers by Registered Post with acknowledgement due or in person. Tenders received in ordinary covers with out seal will not be considered.

The Tender cover should be superscribed as "Sealed Tender for supply of one number of Workstation to School of Physics". The Last date for submission of Sealed Tender is **15.10.2018**, **3.00 p.m** and any Tender received after the due date and time will summarily be rejected.

Palkalai Nagar, Madurai-21. Date :26.09.2018 DR.V.CHINNIAH REGISTRAR

CONFIGURATION OF WORKSTATION

- 1JP11AV HP Z4 G4 Pike WKS
- HP Z24nf G2 23.8 inch Display
- HP Z4 G4 90 465W Chassis
- HP Z4 G4 Country Kit INDIA
- HP Remote Graphics Software (RGS) for Z
- NVIDIA Quadro P1000 4GB (4)mDP GFX
- Base FIO 4xUSB3 TypeA
- Operating System Load to SATA/SAS
- HP miniDP-to-DP Adapter (2-pack)
- 256GB 2.5in SATA SED OPAL2 Solid State Drive
- 2TB 7200RPM SATA 3.5in 2nd
- Business Slim PS/2 Wired Keyboard INDIA
- 128GB (4x32GB) DDR4 2666 DIMM ECC Registered Memory
- HP Optical Wired Mouse USB
- Single Unit (Tower) Packaging
- HP Linux-ready
- 9.5mm DVD-Writer 1st ODD
- Intel Xeon W-2155 3.3 2666MHz 13.75 10C CPU
- HP Z Cooler
- 3/3/3 (material/labor/onsite) Warranty SING
- HP Z4 G4 Memory Cooling Solution
- MISC CONFIG APJ OVERRIDE OPTION
- Intel Ethernet I350-T2 2-Port 1Gb NIC





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MADURAI KAMARAJ UNIVERSITY

(University with Potential for Excellence)

"Sealed Tender for supply of High temperature Tubular Furnace" to the School of Physics, Madurai Kamaraj University.

Application No.

1	Name of the Firm	
2	Full Address	
	(with Pin Code &	
	Telephone /Cell Numbers)	
3	Quoted Amount	
	(List Enclosed)	
4	Details of the EMD amount	Name of the Bank
	remitted	Branch
		DD No.
		Date
		Amount Rs.

Declaration

I have gone through the enclosed / above tender terms & conditions and will abide by them.

Place : Madurai Date





(University with Potential for Excellence) Sealed Tenders are invited For Supply of one number of High temperature Tubular Furnace to School of Physics.

Tender Conditions

Sealed Tenders are invited for the supply of one number of High temperature Tubular Furnace to School of Physics. The Tender should be from the reputed Manufacturers/Authorised dealers.

Tender in sealed covers superscribed as "Tender for Supply of one number of High temperature Tubular Furnace" Addressed to **DR.V.CHINNIAH**, **REGISTRAR**, **Madurai Kamaraj University**, **Madurai - 625 021**. The University will not be held responsible for the postal delay and postal transit.

The Tenderer should enclose an attested xerox copy of the commercial tax certificate regarding GST number. The supply should be made within 30 days from the date of receipt of supply order.

The rates quoted by the firm should be valid for a period of one year from the date of acceptance of tender and no escalation of rates will be allowed under any circumstance. A crossed demand draft 1% to the total cost value should be drawn in favour of the Project Investigator, DST-MES Project, School of Physics, Madurai Kamaraj University, Madurai towards Earnest Money Deposit should accompany the Tender. The successful tenderer is also required to remit 4% cost of supply as security deposit for the proper fulfillment of supply and contract.

The successful tenderer should deliver the item on destination and no freight charges will be paid by the University on any circumstances. If the successful tenderer fails to execute the above supply as per the schedule and satisfaction of the authorities, the resultant excess expenditure that will be there after incurred for the purchase of the above mentioned item, will be recovered from the tenderer apart from forfeiting the E.M.D amount. If any tender is withdrawn, the Earnest Money Deposit of the tenderer will be forfeited.

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The Tender cover should be superscribed as "Sealed Tender for supply of one number of High temperature Tubular Furnace to School of Physics". The Last date for submission of Sealed Tender is **15.10.2018**, **3.00 p.m** and any Tender received after the due date and time will summarily be rejected.

Palkalai Nagar, Madurai-21. Date :26.09.2018

Dr.V.CHINNIAH REGISTRAR

CONFIGURATION OF HIGH TEMPERATURE TUBULAR FURNACE (1400-1600°C)

Double walled construction rectangular in shape with a inner working chamber made of imported alumina tube with molybdenum di silicide heating rods. The temperature is controlled by microprocessor based programmable PID controller.

Outer Chamber is fabricated out of thick C.R.C.A Sheets and has air cooling facility of circulate air by a cooling fan to have a cool exterior to make the skin temperature is maintained around 60 Deg C.

Gas Purging Fittings:

The furnace will be provided with Gas purging end fittings with water cooling arrangement. Fittings should have double silicon O rings with suitable inlets and outlets for gas with a flow meter and flash back arrester suitable for Nitrogen and Argon gas

Control Panel :

- Microprocessor based Programmable PID controller.
- Pilot indicating lights.
- > Thyristor power control device.
- $\succ \text{ HRC fuse units (L & T)}$
- Ammeter
- Voltmeter
- Circuit braker
- Step down Transformer
- Safety controller
- Main isolating switch





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MADURAI KAMARAJ UNIVERSITY

(University with Potential for Excellence)

" Sealed Tender for supply of Vacuum Oven" to the School of Physics, Madurai Kamaraj University.

Application No.

1	Name of the Firm	
2	Full Address	
	(with Pin Code &	
	Telephone /Cell Numbers)	
3	Quoted Amount	
	(List Enclosed)	
4	Details of the EMD amount	Name of the Bank
	remitted	Branch
		DD No.
		Date
		Amount Rs.

Declaration

I have gone through the enclosed / above tender terms & conditions and will abide by them.

Place : Madurai Date





(University with Potential for Excellence)

Sealed Tenders are invited For Supply of one number of Vacuum Oven to School of <u>Physics.</u>

Tender Conditions

Sealed Tenders are invited for the supply of one number of High temperature Tubular Furnace to School of Physics. The Tender should be from the reputed Manufacturers/Authorised dealers.

Tender in sealed covers superscribed as "Tender for Supply of one number of Vacuum Oven" Addressed to **DR.V.CHINNIAH**, **REGISTRAR**, **Madurai Kamaraj University**, **Madurai - 625 021**. The University will not be held responsible for the postal delay and postal transit.

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Palkalai Nagar, Madurai-21. Date :26.09.2018 Dr.V.CHINNIAH REGISTRAR

CONFIGURATION OF VACUUM OVEN

Double walled chamber, outer chamber rectangular in shape made of thick mild steel sheets. The inner chamber is CYLINDERICAL in shape made of stainless steel sheets with provision for vacuum pump and the vacuum guage is provided of the top of unit. The inner chamber accommodate one no. Stainless steel tray at adjustable height.

The oven is insulated with special grade glass wool to reduce the radiation heat loss to the minimum. The door is of stainless steel plate with a specially designed Mechanism having alignment. A perfect seal is obtained by a positive screw specially designed for tightening the lid .A glass window is provided in the centre for viewing without opening the door.

Chamber Size	: 250x250 mm (Diameter x Depth)		
Maximum Temp	: 200°C		
Controller	: Microprocessor based PID controller		
Temp. Display	: Digital		

VACUUM PUMP

Double stage vacuum pump with motor Rotary oil sealed vacuum pump with vacuum gauge, Oil trap, Moisture trap and Exhaust moisture filter

Pumping Speed	:	325 ltrs
Motor Power	:	1HP