



**Advertisement No.FE/D(AA)/1717  
Date. 21.02.2017**

**DEPARTMENT OF AEROSPACE ENGINEERING AND APPLIED MECHANICS,  
INDIAN INSTITUTE OF ENGINEERING SCIENCE AND TECHNOLOGY, SHIBPUR  
HOWRAH – 711 103**

**GENERAL CONDITIONS (GC) AND IMPORTANT INSTRUCTIONS FOR TENDERERS / BIDDERS / SUPPLIERS**

1. Tender Documents with technical specifications and price details are to be submitted in sealed envelopes addressed to the **Head of the Department of Aerospace Engineering & Applied Mechanics, Indian Institute of Engineering Science and Technology (IEST), Shibpur, P.O.-Botanic Garden. Howrah, West Bengal, Pin – 711103, INDIA (formerly Bengal Engineering and Science University Shibpur)**. The sealed envelop should be inscribed with the Ref. Advertisement No. .... Date ..... along with the bidders' name and address.
2. **Tenderers are to submit the tender document in original after accepting the terms and conditions.**
3. **Last date of receipt of tender by IEST, Shibpur is 03.03.2017 (Monday) at 3.00 pm.** Tenders received late will not be accepted under any circumstances. Tenders will be opened in the **Seminar Hall, Department of Aerospace Engineering & Applied Mechanics, IEST, Shibpur, on the same day at 4.00 pm.** In case the Institute remains closed on the said date, tenders will be opened on next working day at 4.00 pm.
4. Materials and Accessories supplied should be as per specification and finally approved by authorized officer of Indian Institute of Engineering Science and Technology (IEST), Shibpur.
5. The Price Bid should clearly mention the following:
  - ❖ Ex Works Price
  - ❖ Packing and Forwarding Charges, if any
  - ❖ Freight and insurance, upto Indian Institute of Engineering Science and Technology (IEST), Shibpur, Howrah, including loading and unloading charges
  - ❖ All taxes, duties, levies applicable
  - ❖ Erection, Commissioning and testing charges at IEST, Shibpur site. Inclusion of statutory payments at a later stage will not be accepted. Central Excise Duty Exemption Certificate will be issued, if required.
  - ❖ Two days initial training of the software
6. The materials are to be supplied within **10 days from the date of placement of order** at **Department of Aerospace Engineering & Applied Mechanics, Indian Institute of Engineering Science and Technology (IEST), Shibpur**, between 11.00 am and 4.00 pm from Monday to Friday except holidays. The tenderers will be responsible for any breakage, damage or defect in the material detected subsequently. Type and quantity of any item may vary according to the decision of the appropriate IEST authority.
7. **EMD of 2% of quoted value** should be accompanied with the tender documents as Demand Draft in favour of **Registrar, Indian Institute of Engineering Science and Technology, Shibpur payable at Kolkata on or before 03.03.2017, 3:00 PM**
8. If the supply is not completed within the stipulated period as indicated in the Tender/ Work Order a Liquidated Damage @ ½ % per week will be imposed subject to 5% of the value of Work Order.
9. Bills in triplicate should be presented for payment within **07 days** of supply/ completion of work. No advance is paid for execution of the order. The Order No. is to be noted on both Challan and Bill. All bills are to be accompanied by order copies and challan receipt.
10. Payment will be made on submission of Proper Bills, Challans etc, by A/C Payee Cheque and no cash payment will be made under any circumstances.
11. All payments are subjected to statutory deductions as and when applicable.

12. Tender is to be kept valid for acceptance for 30 days w.e.f. the last date of submission of the tender without any modifications in its terms and conditions

13. Documents to be submitted with the tender:

- Tender Documents, General Conditions (GC) and Important Instruction in original duly signed by the Proprietor/ Partner/ Director of the company as a token of acceptance of Terms and Conditions of Tender.
- Latest Income Tax, Sales Tax, Professional Tax clearance certificates and copy of valid Trade License and Pan Card.
- Technical information including product brochure / catalogue and Price Bid in a sealed enveloped according to specifications along with the EMD.

14. **The work must be completed by 21<sup>st</sup> March 2017.**

Indian Institute of Engineering Science and Technology (IEST), Shibpur, Howrah reserves the right to accept/ reject all or any of the tenders without assigning any reason whatsoever.

**I/We accept the above terms and conditions.**

**Signature of the Tenderers/ Bidders / Suppliers with date and seal**

## Detail Specifications

### 1. Matrix: Epoxy +MWCNT master-batch (including hardener):

#### Technical Specifications:

Epoxy with hardener	Quantity
2% COOH in epoxy with hardener	3.0 Kg
3% COOH in epoxy with hardener	3.0 Kg

MWCNT Carboxyl	Description
Colour	Black Powder
Purity	>99%
Average Diameter	10-15 nm
Average Length	1-5 $\mu\text{m}$
Surface Area	370 $\text{m}^2/\text{g}$
COOH Ratio	22-24%

Properties	MWCNT
Strength	10 – 60 GPa
Thermal Conductivity	~3000 W/m.k
Electrical Conductivity	~108 Siemens/m
Weight	0.002 $\text{g}/\text{m}^2$

### 2. Fibers:

Fiber Type	Quantity
Glass Fiber Fabric, Unidirectional, Thickness: 0.25 mm, Weight: 200 GSM	8 $\text{m}^2$
Carbon Fiber Fabric, Unidirectional, Thickness: 0.25 mm, Weight: 200 GSM	8 $\text{m}^2$

### 3. PZT powder (250 gm)

Lead (II) zirconate ( $\text{PbZrO}_3$ ) or equivalent PZT powder for nanocomposite.

#### Specifications:

Quantity	250 gm
Assay	99% trace metals basis
form	powder
impurities	<0.5% Hf
particle size	300-350 mesh