Office of the Dean Research and Development
Indian Institute of Engineering Science & Technology (IIEST), Shibpur
Howrah-711 103

Project Code: DRC/DST/CEGESS/HS/022/16-17

Centre of Excellence for Green Energy & Sensor Systems
Indian Institute of Engineering Science & Technology (IIEST), Shibpur
Howrah-711 103

Notice Inviting Quotations

Sealed quotations are invited for the supply of

Item 1. PERC Solar cell front side metallization paste (silver).

as per the following technical specification. The technical specification can be downloaded from the website. The document can be also obtained from the Centre of Excellence for Green Energy & Sensor Systems (**Contact: Prof. H. Saha**) between 10.30 a.m. and 5.30 p.m. on all working days. The invitation is valid for 07 working days from the date of publication of this notice.

Dean (R & D)

(A. Code DRC-T082/17-18)

SECTION I: <u>TERMS & CONDITIONS</u>

1. The last date of receipt of quotation is valid **for 07 working days** from the date of publication of this notice**.** Quotations received later will not be entertained under any circumstances.

2. Potential supplier are to submit the quotations in Sealed Cover to the Centre of Excellence for Green Energy & Sensor Systems in the following address:

   Prof. H. Saha
   CEGESS
   IIEST, Shibpur
   Howrah-711103, India

3. Item name must be mentioned on cover.

4. The price quoted should be inclusive of all Taxes in INR, duties and levies. Inclusion of Tax/Levy at a latter stage will not be accepted. Freight, Insurance charges should be clearly indicated. If GST is chargeable then price quoted should be inclusive of GST in INR.
5. Vendor should have proven track record of supply in IIEST, IIT, NIT, IISc.

6. Commercial Papers duly signed & must be attached.

SECTION II: TECHNICAL SPECIFICATIONS

Item 1.

PERC Solar cell front side metallization paste (silver)

The supplied paste must have the following properties :

- High electrical performance
- High aspect ratio
- Suitable for SiN_x ARC
- Suitable for 70-110 Ω/□ emitters
- Fine line printing
- High adhesion

TYPICAL PROPERTIES

Solid Content, % mass (±2.0 %)	91,0
Viscosity, (HAAKE viscometer, RV 1, Cone 35/°1, D = 10 s^{-1}, T=25,0□0,1 °C), Pa□s	60-80
Fineness of grind, µm, not more than	7
Resistivity (normalized to 15µm on alumina), mΩ/□, not more than	5,0

PROCESS RECOMENDATIONS

Printing	325-400 mesh, finger 35-50µm, EOM 13-17 µm, tension 24-27 N/cm
Drying range	*IR & hot air belt dryers:* 20-60 sec @ 220-260 °C *Circulated air oven:* 6-12 min @ 160-180 °C
Firing Range	840-900 °C
Firing Time at Peak Temperature	3-20 seconds
Firing Medium	Air
Shelf life	6 month
Soldering	60Sn/40Pb; 62Sn/36Pb/2Ag; at 380 – 420 °C