## Central Glass & Ceramic Research Institute KOLKATA (WEST BENGAL) INDIA CORRIGENDUM

REFERENCE NO.:- PS-1/NC/56/SB/SPO/OTE/20-21

DATE: 20/10/2020

NAME OF EQUIPMENT: Twin-Screw Extruder Equipment

NOTE: The Bids must be submitted in the Central Public Procurement Portal (URL: <a href="https://etenders.gov.in/eprocure/app">https://etenders.gov.in/eprocure/app</a>) only. Manual/Offline bids shall not be accepted under any circumstances. Bidders should quote in INR only.

CONSEQUENT TO THE PRE-BID MEETING HELD ON 15/10/2020, THE REVISED SPECIFICATION IS GIVEN BELOW:-

## SPECIFICATIONS:-

## Revised Technical Specifications after Pre-bid Conference Meeting

Twin-Screw Extruder equipment capable of processing high performance polymers [such as Polyether ketone (PEKK), Polyether ether ketone (PEEK) etc.] and their composites reinforced with ceramics fillers. The machine should be equipped with an extruder with double co-rotating and detachable screws, strand die assembly, one volumetric feeder, one water bath with blower and one strand puller for pulling strand.

Detailed Technical Specifications Screw specifications	
Screw Diameter	≥ 19 mm
L/D ratio	≥ 40
Screw Speed (RPM)	Controllable, 1000 RPM or more
Material of construction	High grade wear resistance steel with hardness of ≥ 55 HRC
Nominal Operating Torque	≥ 30 Nm for each shaft
Screw elements	Modular type
Screw Shaft	Screw elements should be mounted on a pair of spline shafts
Barrels	
Barrel Type	Flanged and segmented type with a liner for easy access for cleaning & maintenance
Barrel Diameter	≥ 20 mm (compatible with screw diameter)
/Barrel Liner Material	High grade wear resistance steel with hardness of ≥ 55 HRC or more
Barrel cover	Appropriate insulated barrel cover with handles for safety
Heating system	Electrical cartridge heater
Cooling System	By water circulation through cooing channels.
Number of Zones	Heating and Cooling Zones ≥ 7 Cooling Only – 1 Zone (in Feed barrel) Heating Only ≥ 1 Zones (in Die)
Working Temperature	Controllable, 450°C or more
Strand die	Standard die assembly with easy access for cleaning & maintenance. Die diameter ≥ 2.25 mm
Output	2-5 kg/hour
Melt Pressure Indicator	Appropriate melt pressure indicator for monitoring and safe operation of the Extruder
Vacuum based devolatilizing system	Vacuum level upto 600 mm of Hg should be achieved through a vacuum pump with appropriate vent inserts
Drive and motor	Motor from reliable company such as Danfoss, Honeywell or substantial equivalent with capacity of 400 ± 5% VAC, 3 Phase, 50 Hz.
Gear Box	Appropriate gear box to meet desired screw speed and output as mentioned above

अपिट के ज्या अधिकारी
STORES & PURCHASE OFFICER
सीएसआईआर - केन्द्रीय काँच एवं सिरामिक अनुसंधान संस्थान
CSIR - CENTRAL GLASS & CERAMIC RESEARCH INSTITUTE
CSIR - CENTRAL GLASS & CERAMIC RESEARCH INSTITUTE
(196, ग्रजा एस. सी. मल्लिक रोड / 196, RAJAS.C. MULLICK ROAD
कोलकाता / KOLKATA-700 032

C4-1 C-4	
Control System	Microprocessor based controller system for safe operation of varying motor speed. PID controller for heating control at different zones of the extruder. Appropriate alarm system should be available for monitoring and safe operation of the Extruder.
Feeding System (1 no.)	A twin screw counter rotating or co-rotating Volumetric Feeder system with controllable screw speed 100 RPM or more for feeding materials into the main extruder.
Water Bath (1 no.)	Appropriate water bath with blower for cooling the extruded strand.
Strand puller (1 no.)	Standard strand puller for pulling of extruded strands
Standard Spare List	Screw tip with Cap (1 pair), Thermocouple (2 nos), Cartridge heaters for barrels (4 nos.), Solenoid valve (2 nos.), Non-Return Valve (4 nos.), Solid State Relay (2 nos.), Toughened Glass (2 nos.), Gasket for Vacuum hood (1 set), Stuffing Rope (3 meters), Quick Change coupling (2 nos.), Breaker plate (1 no.), Gearbox oil seal kit (1 set), Spare elements (3 pairs).
Equipment Lay-out	Appropriate equipment lay-out documents should be provided for arrangement of required site preparations for electrical connection and water lining.
Warranty	12 months warranty from the date of successful installation, commissioning and training.
Packaging, Transportation & Insurance	Charges should be borne by the supplier
Installation, commissioning, and training	<ul> <li>All the essential requirements ensuring ready to use set up at CSIR-CGCRI Campus.</li> <li>Standard operations and maintenance related training should be provided to CSIR-CGCRI Team.</li> <li>Maintenance and operating manuals in English should be provided.</li> </ul>
Customer List and contact details	Supplier should supply the details of their Customer List and contact details demonstrating proven history of supplying substantially similar type of Twin-Screw Extruder equipment to minimum three clients (either Government Lab or Academic Institute or Private Industry) in national level during last 5 years period.

The above amendments shall amount to amendments of the relevant terms of our Bid Document for CGCRI Tender No. **PS-1/NC/56/SB/SPO/OTE/20-21**.

All other Tender terms and conditions remain unchanged.

Bidders should quote only in INR.

(R. Ray) Stores & Purchase Officer