**Technical specification for Aluminium Foam Forming Furnace**

**1. Type**

a. Twin furnaces placed one above the other. Distance between the two furnaces should be adjustable 500 mm to 1000 mm through hydraulic or motorized control gear.

**2. Furnace I**

a. Should be placed at the top

b. Bottom pouring

i. Suitable for automatic opening of jet valve of 3 mm or the required size to pour the pressurized melt to the bottom furnace at required pressure.

ii. A hollow tube should be fitted below the crucible with heating facility so as to direct the melt flow into the bottom furnace at a high pressure. Sufficient number of gas inlet/outlet should be provided in this hollow tube.

c. Continuous operating temperature 1000 °C.

d. High pressure should be maintained inside the crucible or retort.

e. Inner dimension: diameter 100 mm × height 300 mm.

f. Atmosphere control

i. In the crucible:

A. Gas tight lid should be provided.

B. Pressure will be created in the crucible using argon gas, gas will be provided by us but all necessary gas flow regulators and controllers should be provided by the supplier.

ii. In the (bottom) hollow tube:

A. Mixture of Argon and Oxygen/Air will be inserted into the bottom hollow tube.

B. Digital gas mixing controllers and stainless steel gas mixing tank should be provided.

C. Gas will be provided by us.

**3. Furnace II**

a. Placed at the bottom, below the Furnace I.

b. Stirring system

i. Should have an stirring mechanism with variable stirrer speed control till 1800 rpm,

ii. Digital indicator of stirrer speed should be available and

iii. Stirrer should be lifted and lowered using hydraulic or motorized lift.

c. At one position this furnace should be below Furnace I and at another position it should be easily moved below the stirring assembly.

d. Continuous operating temperature 1000 °C.

e. Inner dimension: diameter 150 mm × height 300 mm.

f. Metallic scrapper should be provided to remove the foam.

**4. Control panel**

a. The control panel should have all necessary instruments such as temperature indicators, pressure indicators, gas mixing controllers, safety instruments, etc.

**5. Selection clause:**

a. The firm/manufacturer applying should have supplied a minimum number of five bottom pouring stir casting furnaces to IITs and IISc.