



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai 400076.

PR No. 1000016639

RFx No. 6100000698

Technical Specification for Single Tilt Heating Holder & Single Tilt straining Holder

Single Tilt Heating Holder:

- i) Proposed Single Tilt Heating Holder should be compatible with TF Themis 300 TEM with Super-Twin Pole piece.
- ii) It should have Hex-ring specimen clamping system for mounting specimen and to ensure good thermal contact between specimen and furnace.
- iii) Temperature at specimen holder tip should be maintained near the temperature of the specimen stage using water-cooled specimen rod.
- iv) Max. operating temperature: 1300⁰C
- v) Resolution at 0⁰ tilt and ≤500⁰C : 0.34 nm
- vi) Specimen size : 3mm
- vii) Observable area at 0⁰ tilt : 3.24 mm² and 2.03 mm (dia)
- viii) Max. grid thickness : 200 μm
- ix) Standard holder tip material : Beryllium copper (suggested)
- x) The complete holder set-up should include Water Circulator and Temperature controller.

Single Tilt Straining Holder:

- i) Proposed Single Tilt Straining Holder should be compatible with TF Themis 300 TEM with Super-Twin Pole piece.
- ii) A side entry type, single tilt straining holder for elongating electron transparent specimens at controlled rates in TEM.
- iii) The specimen holder tip should have an appropriate opening with two points for securing the specimen. Should utilize Hex-lock clamping mechanism to firmly and securely holding each end of the specimen in place, during elongation.
- iv) Appropriate controller to apply a constant elongation rate in the range of ~2.0 μm/s.
- v) Start and stop of elongation with press of a button. The controller should display crosshead displacements with a resolution of at least 1 μm and should have an auto zero button to return the crosshead to either its original zero position or an offset zero position.
- vi) Should include a specimen rod stand to facilitate specimen loading under a stereo microscope. Appropriate Hex-locks, Hex-Lick tools and clamping plates must be provided.

- vii) Maximum drift rate at 0° tilt: 1.5 nm/min
- viii) Resolution at 0° tilt: 0.34 nm
- ix) Specimen size (maximum): 2.5 x 11.5 mm (L x H)
- x) Observable area at 0° tilt: 5.0 (mm²)
- xi) Max. sample thickness: 400 μm

Warranty:-(02) Two Years warranty.