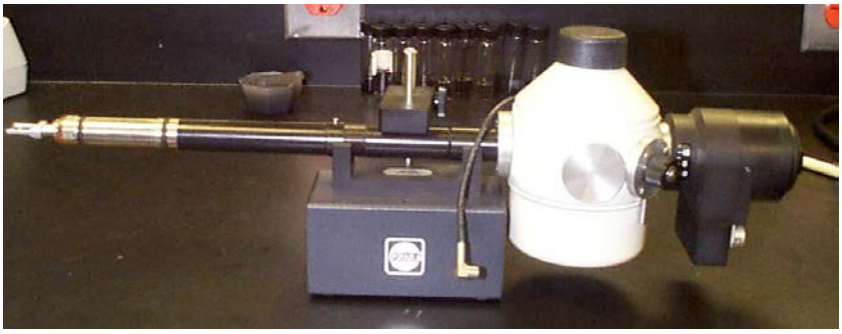
Special Holders for Transmission Electron Microscopy

Location: Science and Engineering South, 116A, 104B

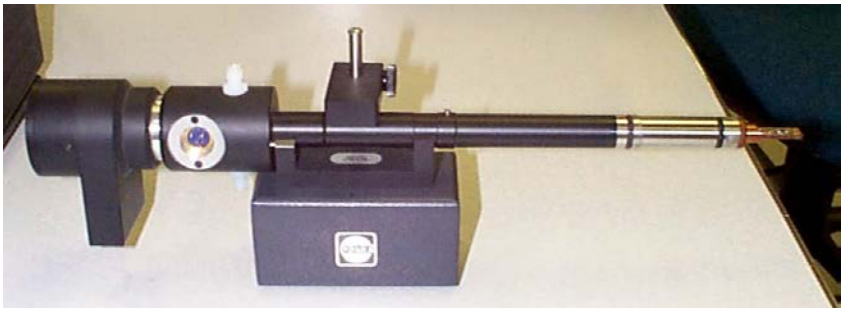
Description

As well as the standard JEOL single and double tilt stages, EMS also has a number of special holders designed for the JEM-ARM200CF and JEM-3010. There is no additional charge to use these stages in addition to the hourly microscope use charge, but regular users must book the stages on UICore. Some stages need conditioning the day before use and you will need additional training to use any of these stages - please e-mail EMS staff in advance if you want to use these stages.

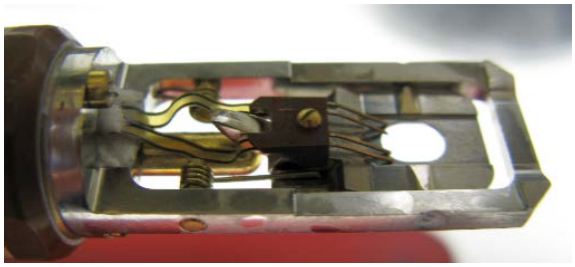
The **Gatan Model 636 Double Tilt Cold Stage** is liquid nitrogen cooled and can reach a temperature of -170 deg C. Thermal drift after 45 minutes is less than 0.1nm/second. The maximum tilt for this stage is 18 degrees. Standard 3mm specimens fit in this holder.



The **Gatan Model 652 Double Tilt Heating Stage** can be used up to 1000 deg C. Above 500 deg C additional water cooling is necessary. The temperature is reached within 1 minute and after 10 minutes drift rates should be less than 0.2nm/second. The maximum tilt for this stage is 8 degrees in X and 6 degrees in Y. Standard 3mm specimens fit in this holder.



The **Protochips Aduro Double Tilt ElectroThermal Stage** can be used up to 1200 deg C with thermal E-chips or, provide a platform for precise electrical current and voltage biasing using Electrical E-chips. The specimen is mounted on an E-chip specimen support, which allows heating ramp rates of up to 1000 deg C per millisecond with ultra-low drift. The specimen volume must be kept to a minimum.



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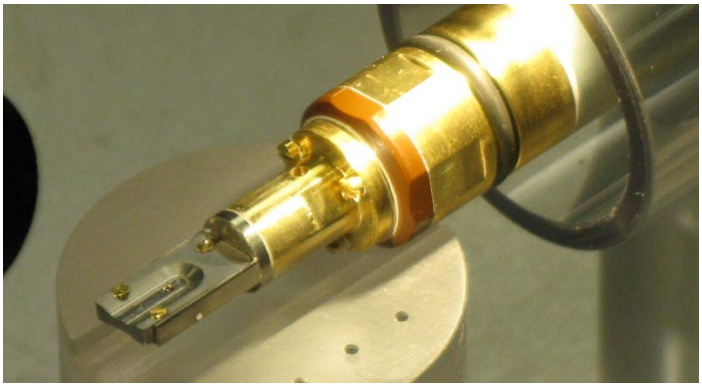
The **Protochips Poseideon Liquid Stage** allows imaging of materials and biological samples in a self-contained and fully hydrated flowing and mixing chamber, directly within the TEM. (Purchased by Tolou Shokuhfar)



The **Nanofactory STM-TEM stage** can be used to measure the electrical properties at specific locations of a nanostructure with sub-nanometer accuracy. The holder has a maximum current range of 0.5mA, a maximum bias of +/-10V and a max scanning range of 25umx25um. (Purchased by Reza Shahbazian-Yassar)

The **Fischione Model 2030 ultra narrow gap, single tilt, Tomography Holder** allows tomographic series to be recorded over a tilt range of +/-70 degrees. Designed to operate in the narrow gap URP pole piece, it uses special 1.5mm square grids or half 3mm grids.

The **Fishione Model 2560, single tilt, Vacuum Transfer Holder** allows specimens to be transferred to the microscope without seeing atmosphere. For specimen protection during transfer to the TEM, the specimen is retracted into the body of the holder, which in turn seals and isolates the specimen from the surrounding atmosphere. The holder is ideal for sensitive specimens that can be altered by environmental conditions; the specimen can be transferred in the presence of vacuum or an inert gas environment. Loading TEM specimens in vacuum or an inert atmosphere requires the use of a glove box.