List of in-situ holders in EMC

1. The **Gatan Model 636 Double Tilt Cold holder** 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.
2. The **Gatan Model 652 Double Tilt Heating holder** 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.
3. **The Protochips Fusion Double Tilt Heating holder** can be used up to 1100 deg C. Drift rate can be minimized using drift corrected embedded in AXON software by Protochips. Atomic resolution imaging can be achieved. This holder is also optimized for EDS acquisition. Please note that EDS acquisition cannot be used above 300 degree C.
4. The **Protochips Poseideon Liquid holder** allows imaging of materials and biological samples as well electro chemical reactions in a self-contained and fully hydrated flowing and mixing chamber, directly within the TEM.
5. The **Protochips Poseideon Liquid holder with heating capability for electro chemistry usage.**
6. 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.
7. 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.