

External resistive heaters at beamline 1222, ALS

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External resistive heating for the diamond anvil cell can generate a homogeneous temperature field across the sample chamber, with reliable temperatures measured by thermocouple, and plays an important role in high pressure high temperature experimental work. On beamline 1222, ALS, there are two kinds of external resistive heaters available for users: band heaters and a ring heater. The band heater is a low maintenance/support user facilities for BX90 cells, symmetric cells and other typical sizes of diamond anvil cells up to 900K with a membrane in a protection can, and its temperature control operation system is being developed as a user friendly Labview code. The ring heater is made of tungsten wire, and is presently used for the BX90 cell only and it can heat the sample in the DAC up to 1700K. In addition, the ring heater is equipped with a membrane, and is employed in a protective reduced gas environment.