

AN INEXPENSIVE STAGE FOR REFLECTION GEOMETRY VARIABLE TEMPERATURE DIFFRACTION USING AN OFF-THE-SHELF PELTIER DEVICE

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Variable temperature XRD is a powerful tool for studies of a wide range of materials of practical interest. However, highly integrated sample stages for XRD measurements are often very complex, difficult to use and expensive. For studies near room temperature (-30°C to $+90^{\circ}\text{C}$), a simple, inexpensive system can be built using widely available, off-the-shelf components. I'll describe such a system and its performance, as well as illustrate its utility with low-temperature data used to calculate the thermal expansion of ethylene carbonate below its melting point.