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**Controlled-Temperature Diffraction Measurements on Samples in Glass Capillaries.** Brian Litteer, Martijn Fransen and Richard Glazer<sup>\*\*</sup>, PANalytical Inc., Natick MA, USA, \*PANalytical B.V., Lelyweg 1, 7602 EA Almelo, The Netherlands, \*\*Oxford Cryosystems, 3 Blenheim Office Park, Lower Road, Long Hanborough, Oxford, OX29 8LN, UK.

The measurement of samples in glass capillaries has advantages for certain types of materials, for instance samples with anisotropic crystallite shapes or crystallites in liquids. With the introduction of multi-purpose X-ray powder diffractometers, the capillary technique has become a standard addition to the conventional Bragg-Brentano reflection geometry. For controlled temperature experiments, however, the reflection geometry is still mostly used, especially in the case of low-temperature measurements.

In order to obtain a controlled-temperature device for capillary powder diffraction, a Cryostream (an established product in the single crystal community) has been modified, in close collaboration between Oxford Cryosystems and PANalytical. Key question in this integration is of course the accuracy of the sample temperature along the capillary length. In this study, we determined the temperature accuracy of the Oxford Cryostream for this powder diffraction application and show an example of what can be done with this capillary heater-cooler.