

## Novel in-situ X-Ray reaction cell from Cape Catalytix

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The novel IKEY X-Ray reaction cell allows for continuous structural property monitoring of materials such as heterogeneous catalysts as function of reaction environment (temperature, pressure, gas composition and flow conditions). When coupled with off-gas analysis (gas chromatography, mass spectroscopy, etc.) it provides for a full operando characterization method. The cell has very accurate temperature control and provides flow patterns which allow for meaningful kinetic measurements, both crucial requirements for catalytic performance studies. Moreover, the unit can be used with most reactive gases needed in academic and industrial research. The reactor can be used Synchrotron facilities (e.g. for XRD, XAS) or mounted directly onto laboratory X-Ray diffraction instruments. It is controlled via the IKEY universal controller.

Technical examples demonstrating features and advantages of the set-up will be highlighted in the presentation.

