9th Annual Ambient Pressure X-ray Photoelectron Spectroscopy Workhop



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## Tailored Mass Spectrometry Solutions for the Gas Analysis in APXPS Setups

## Content

Mass spectrometry is a versatile, powerful and fast technique that allows analyzing gas components and component concentrations and therefore enables an insight into the reaction that takes place at the sample surface during APXPS measurements. The possibility to perform online measurements duringcatalytic reactions (e.g. water gas shift, methanol steam reforming) permits kinetic studies and the ability to draw conclusions about the reaction mechanism.

An intelligent gas inlet system offers the possibility to connect only one gas analysis system to various sampling points at high pressure and ambient pressure reaction cells even when high pressure differences are present. Inlet setups for various ranges are available which can be used for example with high pressure reaction cells (1 -20 bar), ambient pressure setups (1 -250 mbar) and in high vacuum.

We are going to present different system concepts based on InProcess Instruments gas analysis systems to address the most common analytical requirements of modern APXPS systems. The adaptability of the gas inlet systems to different pressure ranges and gas types is realized by a sophisticated system design and smart valve sequences. Thus allowing the determination of the gas composition during different stages of sample preparation and in-situ surface analysis.

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