

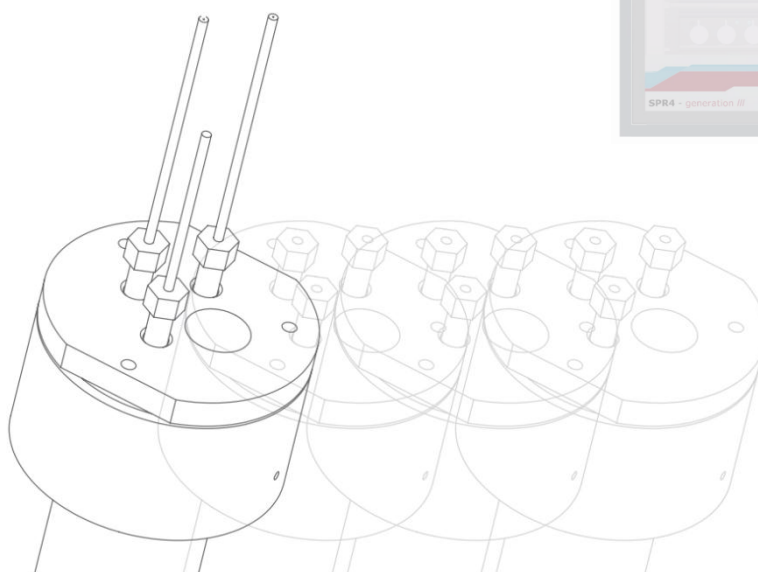
coming soon

catalyst testing

compact

Product announcement

**Amtech parallel
reactor series -
SPR4**



Designed for

- *Catalyst and materials screening with integrated, simultaneous analysis*
- *Process optimisation*

...compact high throughput testing

SPR4 features of reactor system



Overall design/key characteristics

- > Modular set-up (separate modules for gas supply, liquid supply, reactor, analysis etc...)
- > Compact overall dimension, fitting to standard fume hood

Standard operating limits

- > Operating pressure up to 150 bar
- > Operating temperature up to 220 °C (pretreatment up to 250 °C possible)
- > Stirring speed up to 2000 rpm

Reactor

- > 4 identical stirred tank reactors
- > Reactor volume: 15 ml
- > MoC: stainless steel SS316L/Hastelloy® C276
- > O-ring sealing
- > Each reactor with certified rupture disc
- > Each reactor with individually adjustable heating and stirring
- > Each reactor equipped with internal filter in sampling line

Automated gas and liquid supply

- > Gas and liquid supplies via a selection valve
- > Standardly MFC for 2 reaction gasses, 1 inert gas
- > Automated pressure control loop
- > Liquids fed to reactors under pressure with a HPLC pump
- > Feeding air sensitive liquids and homogenous catalysts possible

Sampling & analysis

- > Automated liquid sampling under process conditions
- > Standard sample size of 100 µl
- > Automated analysis with integrated NIR spectrometer irSys®E

Data management, automation, safety

- > Safety PLC and control panel for visualisation and experiment selection
- > MySQL database
- > Exportable data

SPR4 features of integrated NIR spectrometer

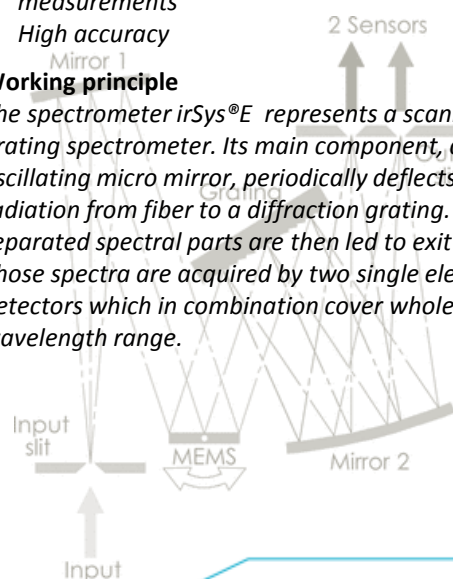


Key characteristics

- > Compact, mobile and affordable
- > Industrial proven body
- > Quick acquisition enables real-time measurements
- > High accuracy

Working principle

The spectrometer irSys®E represents a scanning grating spectrometer. Its main component, a fast oscillating micro mirror, periodically deflects radiation from fiber to a diffraction grating. The separated spectral parts are then led to exit slits. Those spectra are acquired by two single element detectors which in combination cover whole wavelength range.



Technical specifications

- > Wavelength ranges between 660 up to 2390 nm dependent on configuration
- > Si and/or InGaAs detectors
- > Different slit widths; up to 5µm upon request
- > Measurement throughput of 80 spectra/min

Software, data management

- > Control integrated into reactor system PLC
- > irSys®E application software for spectra visualisation
- > Simple spectral operations like offset correction or referencing possible
- > Export options for acquired data

amtech
high throughput technology

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