WCPT62010
Poster 613

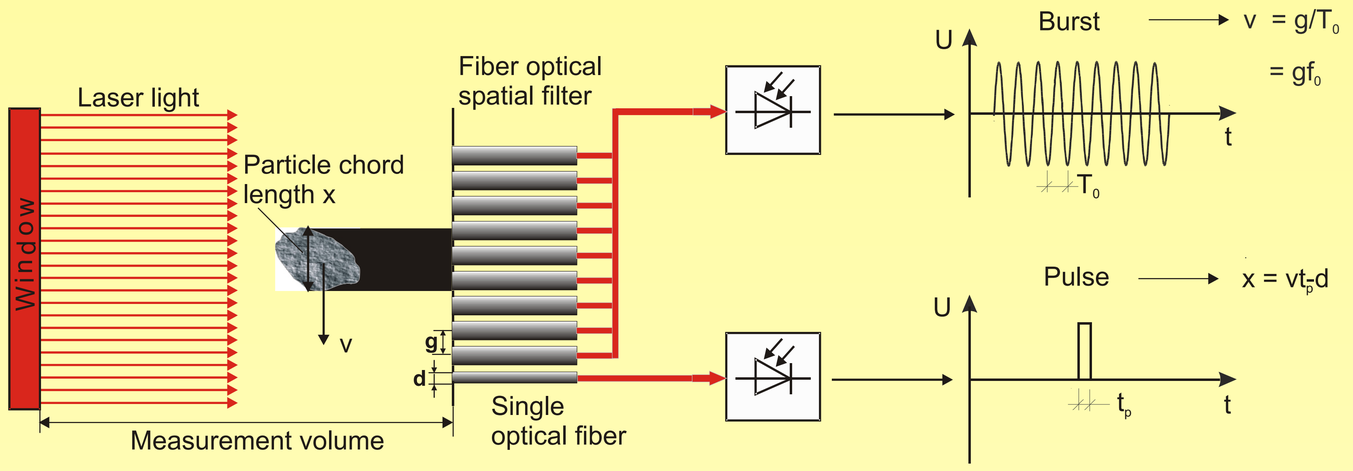
In-line particle sizing for process control by an optical probe based on the spatial filtering technique (SFT)

The control of particulate processes and their understanding can be improved by sizing measuring techniques of Parsum GmbH. In-line sizing instruments of Parsum GmbH are based on fiber-optical spatial filtering velocimetry and fiber-optical spot scanning. Main advantages of the sizing instruments are the compact design, robustness and the adaptation to different process conditions.

Basic principle

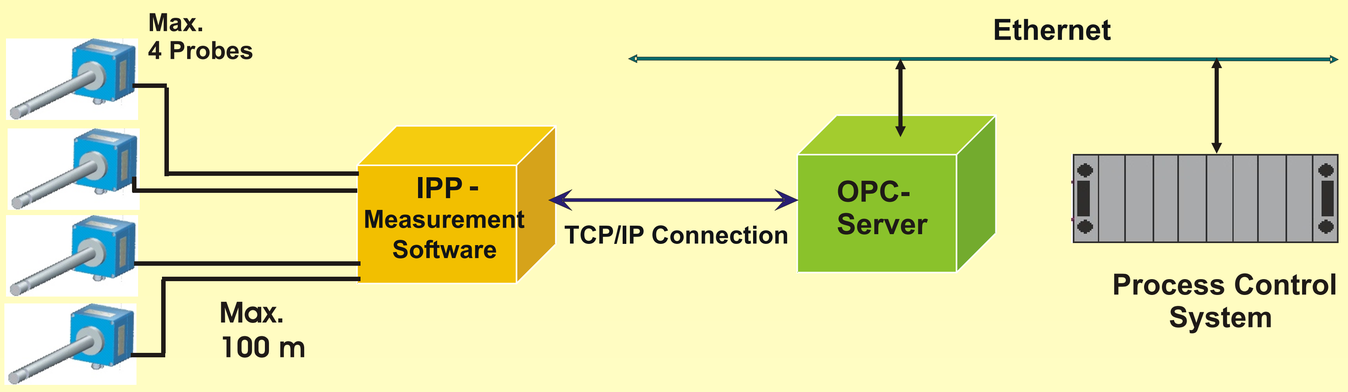
robust measurement of particle size and particle velocity based on the shadow image of a single particle

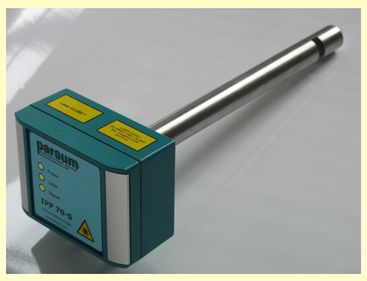
probe signals contain a central frequency and an impulse width which are proportional to the velocity and the chord length



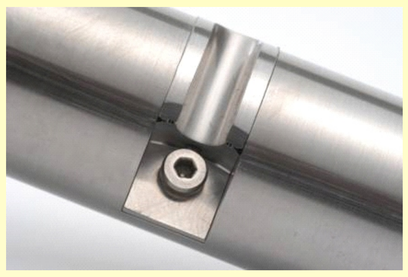
Instrumentation

Size range: 50...6,000 µm
Velocity: 0.01 m/s...50 m/s
Probe length: 280 mm...4,000 mm
Probe diameter: 25 mm...50 mm
Temperature range: -20°C...100°C
Data rate up to 20,000 particles/second
Interface 4...20 mA or Web-Server





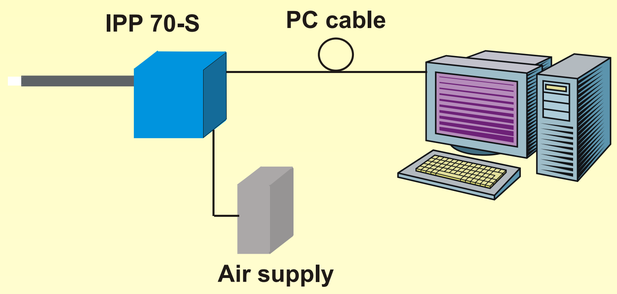
Parsum probe IPP 70



Probe with flushing cell

Probe with diperser

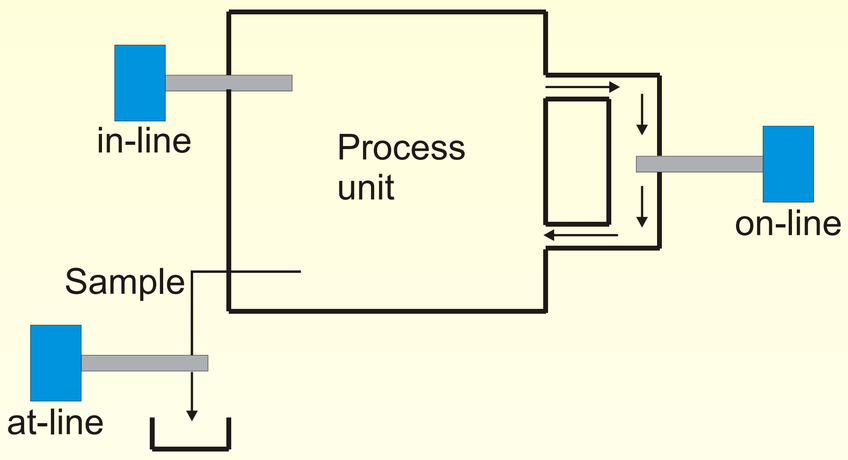
Air supply unit



Basic equipment

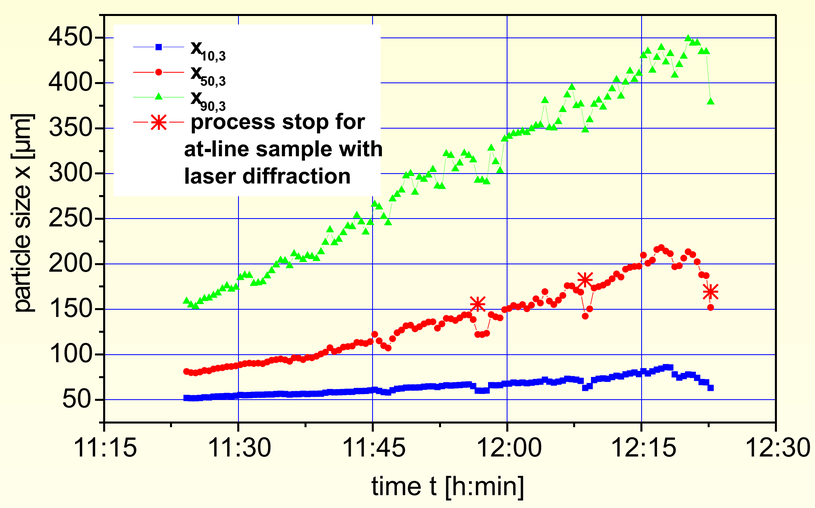
Application

The application is given for grinding/dosing, agglomeration, fluidized bed processes, transportation and filling, sieving, wet and dry granulation, spray drying. Examples show also the ability to prove the model goodness of a fluid bed process by using the in-line-SFT [Närvänen et al.].



Ex environments
pharma solutions

In-line measurement with probe IPP 70 for batch fluidized bed granulation



Batch fluidized bed granulation of 5 kg lactose with pharmaceutical ingredients

Latest References

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