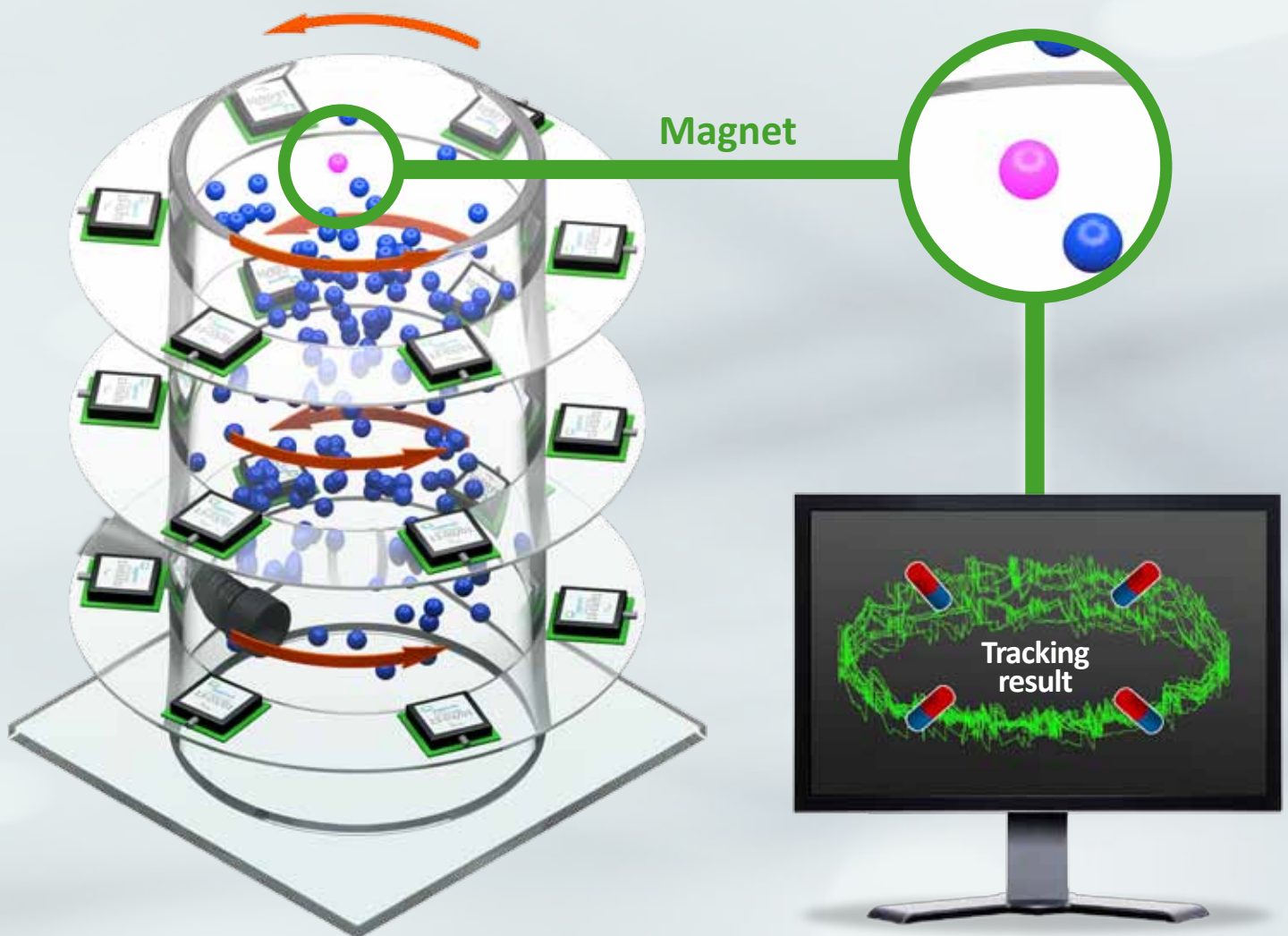




magtrack
by matesy

Tracking of magnetically marked particles in fluidized and spouted bed systems

Localization result in a rotor system model (below)



The magtrack-System is based on the Magnetic Marker Monitoring. It was developed for the recording of the motion sequences in closed systems, in order to analyze and optimize such processes. With the magtrack it is possible to detect the absolute orientation in a defined space of the magnetic marked particles. The magtrack-System has a modular design and can be adjusted to most equipments and a variety of systems.

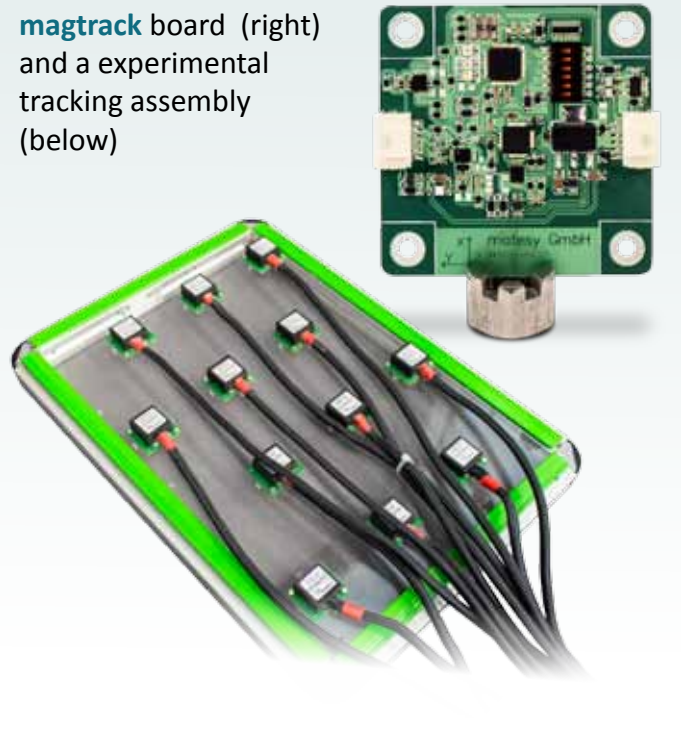
Application background

The optimization of motion sequences in mixing, coating and drying processes, as they take place in fluidized and spouted bed units, require a continuous tracking of, at least, one particle. Through the analysis of the motion of a single particle, the process parameters can be adjusted. This allows you to operate and monitor the entire system performance effectively.

The magtrack measurement method is based on a 3D localization of a magnetic marker. At this point the real-time measurement shows the tracking of the motion of a magnetically marked object. The comprehensive and fast evaluation of the particle trajectory, with a sample rate up to 1,000 Hz is done offline. Precise and statistically reliable conclusions about the entire process can be made accordingly.

The main advantage of the magtrack system, compared with other methods, such as PIV (Particle Image Velocimetry) or PEPT (Positron Emission Particle Tracking) is a non-contact, non-optical and non-ionizing-radiation based measurement method. In addition to the 3D trajectory, magtrack always provides the orientation of the particle for every position.

magtrack board (right) and a experimental tracking assembly (below)



Technical features

• Sensors:	AMR (up to 72 channels)
• Measurement data:	3D-position, orientation
• Measurement frequency:	up to 1 kHz
• Magnetic marker:	8 mm ³ to 1,000 mm ³
• Accuracy:	up to 1 mm
• Control:	IBM compatible PC
• Software:	measurement & evaluation
• Interface:	USB 2.0
• Power supply:	80-260 VAC / 47-63 Hz

