



# coreMPI

## Magnetic Particle Imaging for Nanoparticle Characterization

lightweight. fast. benchtop.

- 3D imaging of magnetic nanoparticle distribution (up to 50 volumes/s)
- arbitrary sequences & trajectories (rapid reconstruction modeling)
- high magnetic field gradient (up to 10 T/m)
- innovative encoding scheme (fully electrical Field-Free Line)
- real-time data processing and visualization

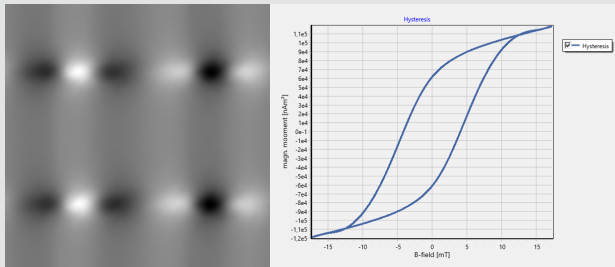


Start smart: The coreMPI system is a great starting point to dive into the field of MPI. With our dedicated control software OctoView the coreMPI scanner comes into play for any research lab interested in imaging or analyzing magnetic nanoparticles. You want to inspire your students to join into MPI research or nanomedicine? The coreMPI scanner serves as an excellent educational tool, offering an introductory experience to the detection principles of magnetic nanoparticles.

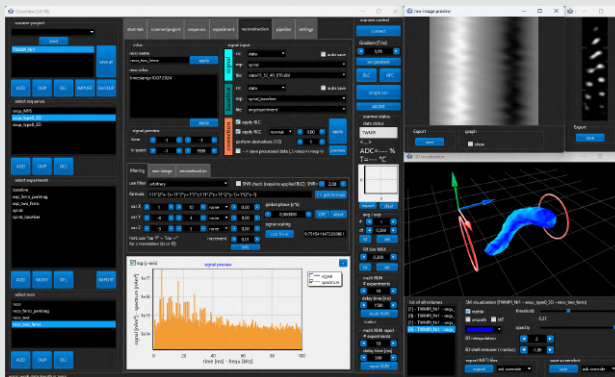


# Applications

## Investigation of tracer performance



Point-spread function (PSF) and hysteresis information of Synomag<sup>®</sup> within one scan unveils the performance of the tracer for imaging and hyperthermia.



Fast and intuitive setup and control of the coreMPI scanner with our versatile OctoView software.



# Device specs

	coreMPI <sup>1)</sup>	coreMPI customized <sup>2)</sup>
Innovative coil design	yes (dLGA gen2)	yes (dLGA gen2)
Bore size	16 mm (vertical)	16 mm (vertical)
Gradient strength	adjustable up to 1 T/m	adjustable up to 2.5 T/m
Encoding scheme	2D/3D FFL	2D/3D FFL
Field of View	12 mm diameter 35 mm length	12 mm diameter 35 mm length
Drive field strength	adjustable up to 10 mT	adjustable up to 50 mT
Frequencies	f1/f2/f3: arbitrary up to 10 kHz	f1: fixed (~10 kHz) f2/f3: arbitrary up to 1.5 kHz
Sequences	arbitrary	MPS, 2D, 3D
Current controlled	yes	no
Temperature stabilized	yes	yes
Cooling	passive	Passive (compressed air)
Active Feedthrough Correction (AFC)	yes	yes
Fast scanning mode	yes (up to 40 volumes/s)	yes (up to 40 volumes/s)
Smart Frequency Selection (SFS)	yes	partially (2 of 3)
Modular lightweight design	yes 1x drive (benchtop) 1x MPI unit (benchtop) 2x DC-600 (benchtop)	yes 1x drive (benchtop) 1x MPI unit (benchtop) 1x dedicated amplifier rack (wheeled)
Open Matlab interface	yes	yes

1) The coreMPI design allows adjustable parameters for specific questioning. The indicated list describes the standard setup.

2) Example for a customized coreMPI setup.

