

bioMPI



Benchtop Magnetic Particle Imaging

intuitive. fast. benchtop.

- 3D imaging of magnetic nanoparticle distribution (up to 50 volumes/s)
- variable magnetic gradient field strength (up to 4 T/m)
- scalable bore size for small rodents (up to 70 mm)
- innovative encoding scheme (fully electrical Field-Free Line)
- real-time data processing and visualization

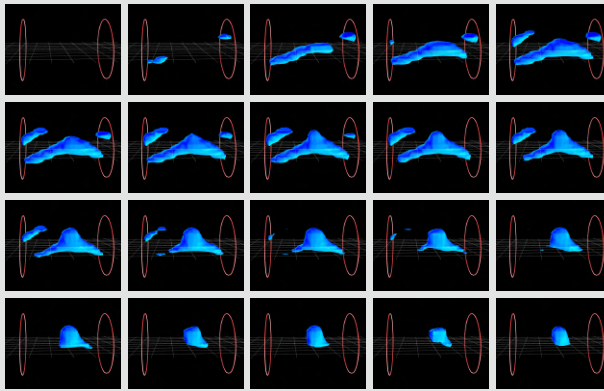


MPI is growing! Not only as a research area, but also in terms of sample size. The bioMPI scanner allows for bigger samples, being able to fit small animals like mice. That's what makes the bioMPI scanner interesting for applying MPI in life sciences! It's a great landmark to extend the accessibility to benchtop small animal MPI scanners.

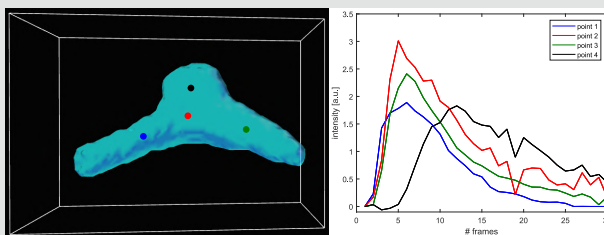


Applications

Investigation of flow dynamics



Real-time visualization of a Perimag® tracer bolus pumped through an aneurysms phantom with 10 volumes per second.



Time-to-peak data extraction using 3D Viewer software.



Device specs

	bioMPI ¹⁾
Innovative coil design	yes (dLGA gen2)
Bore size	40 mm (horizontal)
Gradient strength	adjustable up to 1 T/m
Encoding scheme	2D/3D FFL
Field of View	35 mm diameter 60 mm length
Drive field strength	adjustable up to 20 mT
Frequencies	f1: fixed f2/f3: arbitrary up to 1.5 kHz
Sequences	MPS, 2D, 3D
Current controlled	no
Temperature stabilized	yes
Cooling	passive (compressed air)
Active Feedthrough Correction (AFC)	no (passive filtering)
Fast scanning mode	yes (up to 40 volumes/s)
Smart Frequency Selection (SFS)	partially (2 of 3)
Modular lightweight design	yes 1x drive (benchtop) 1x MPI unit (benchtop) 1x dedicated amplifier rack (wheeled)
Open Matlab Interface	yes

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

