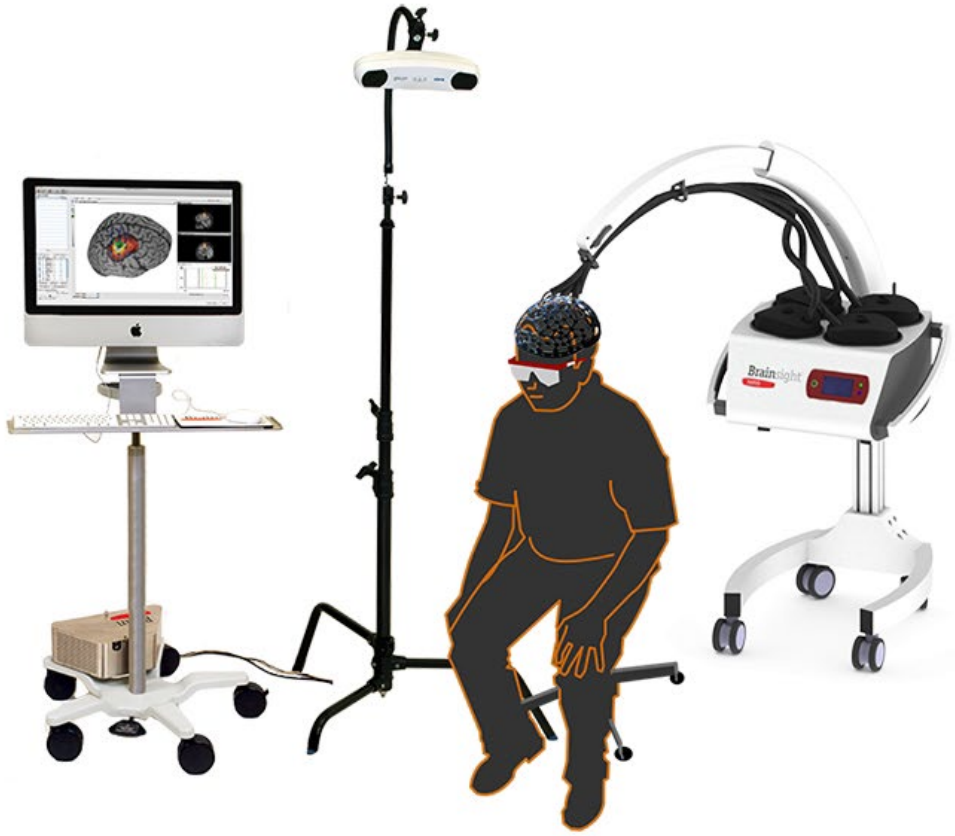
Brainsight® NIRS

Brainsight® NIRS effortlessly combines NIRS imaging and neuronavigation to provide a unique and powerful solution for functional brain imaging in neuroscience.

(Near Infrared Spectroscopy) is a form of imaging that can capture brain function (functional brain imaging). NIRS uses infrared light to detect changes in the concentration of oxygenated and de-oxygenated haemoglobin in the blood, through obstacles such as skin and bone. Using principles developed for functional magnetic resonance imaging (fMRI), it has been established that these changes in blood oxygenation are directly correlated to alterations in brain activity.

Brainsight® NIRS achieves this brain imaging using dual wavelength laser sources and high sensitivity detectors for deep brain measurements. In addition, Brainsight NIRS benefits from supplementary detectors for dedicated measurement of superficial signals (e.g. from the scalp), which can then be removed from the analysis. The locations of all sources and detectors can then be recorded using Brainsight's neuronavigation features, allowing the variations in blood oxygenation levels to be mapped onto 3D reconstructions of the subject's brain (or an average brain, if subject-specific MRI is not available).



Specifications of Brainsight® NIRS

- up to 32 channels: in modules of 8, each one including 4 dual wavelength laser sources, 8 high-sensitivity "cortical" detectors, 2 proximal "scalp" detectors
- 8 auxiliary channels
- Dual wavelength: 690 nM/830 nM
- Sampling rate: 100 Hz for NIRS signal, 3 kHz for auxiliary channels
- Unique patented optode and cap design to optimize multi-modality use, including: NIRS & tDCS / NIRS & TMS / NIRS & EEG / NIRS & TMS & EEG / NIRS & MEG / NIRS & MRI
- High frequency NIRS sampling (100 Hz)
- 8 analog channels (sampling at up to 10kHz) to simultaneously record the stimulus and bio-signals (e.g. pulse-ox, breathing) alongside the NIRS signals.
- Unique dedicated scalp activity detectors. In addition to the 32 high-sensitivity cortical detectors, each source fibre has a dedicated, close proximity detector to help estimate the scalp component of the measured NIRS signals.
- Unique neuronavigation-centric software easily manages simultaneous NIRS, TMS, EMG and EEG acquisition on one control computer. All data is acquired in one place and can be exported using common file formats so you can use your favorite tools for analysis.

Manufacturer Links (rogue-research.com)

- **Hardware** https://www.rogue-research.com/nirs/hardware/
- **Software** https://www.rogue-research.com/nirs/software/
- **NIRS Caps** https://www.rogue-research.com/nirs/caps/
- **Specifications** https://www.rogue-research.com/nirs/specifications/

Brainsight NIRS compatible systems

- **Brainsight® TMS Navigation**
  https://www.rogue-research.com/tms/brainsight-tms/
- **NEURO PRAX® TMS/tES**
  https://www.neurocaregroup.com/technology/neuro-prax-tms-tes/
- **DC STIMULATOR PLUS**
  https://www.neurocaregroup.com/technology/dc-stimulator-plus/

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