

Brite Frontal

A wearable, user-friendly and easy-to-use fNIRS system for prefrontal measurements



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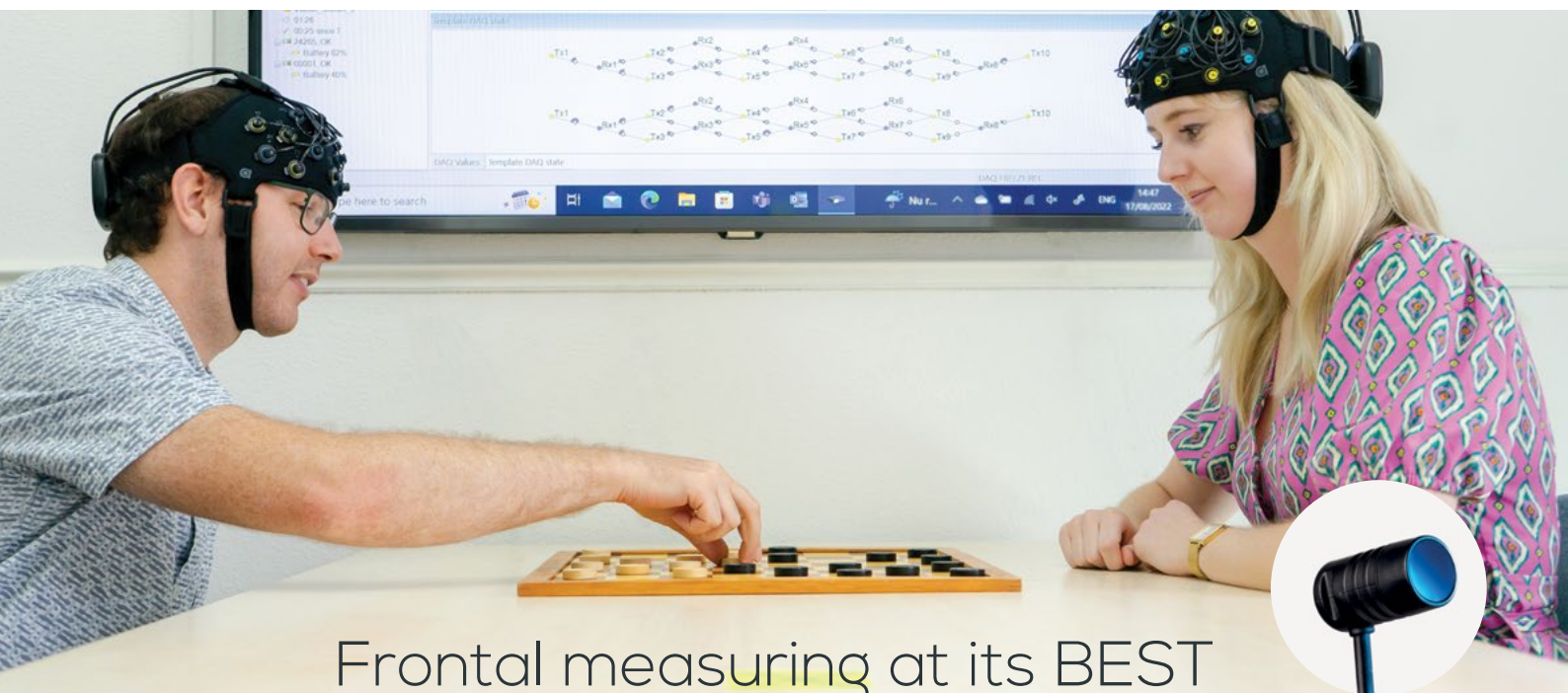
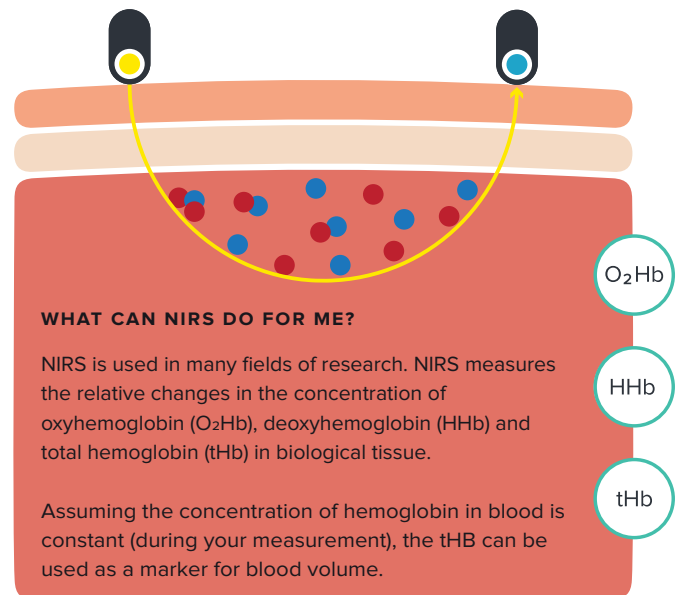
Contact us at
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Near Infrared Spectroscopy

Near Infrared Spectroscopy (NIRS), the technique which the Brite Frontal is based on, relies mainly on two characteristics of human tissue: first, its relative transparency for light in the NIR range and second, the oxygen dependent absorbance of hemoglobin. Based on these principles, the Brite Frontal makes it possible to monitor the prefrontal cortex activity of your subject:

- ✓ Non-invasively.
- ✓ Continuously, including recording and feedback.
- ✓ Affordably and without disposables needed.
- ✓ Wireless with almost no setup time.
- ✓ In easy setup and in any environment, both indoors or outdoors.



Frontal measuring at its BEST

Boundless possibilities

Weighing only 300 grams and with almost no set-up time, the Brite Frontal enables studying the prefrontal cortex activation in almost every setting. The Brite Frontal can be used independently or combined with another a second device to perform hyperscanning.

Easy to use

The headband of the Brite Frontal is quickly taken on and off. With adjustable bands and perfect fit for the frontal area, it is comfortable to wear, also for longer measurements. This makes the device user-friendly and suitable for measuring with sensitive participants.

Suitable for any setting

As the device is wireless and wearable, the Brite Frontal enables freedom for both researcher and participant. It is also optimized with ambient light correction, making it possible to reliably measure prefrontal cortical activity in real-life settings.

Top-notch data quality

The Brite Frontal delivers improved data quality through reduced system noise. Its novel high-sensitivity receivers enable high signal quality with shorter setup times, particularly when measuring over dark and thick hair. In addition, an enhanced dynamic range increases overall system sensitivity, further improving measurement reliability.



Measures oxy-, deoxy-, and total hemoglobin concentration changes in the prefrontal cortex.



Easy data acquisition and analysis with our superior software solutions, OxySoft and Brite Connect.



Truly wearable & flexible for a wide range of participants.



Multi-power gain control feature that allows to select the optimal light intensity settings for each channel and each participant.



Applications

The Brite Frontal can be used to measure oxygenation in the prefrontal cortex. Due to its comfort and ease of use, participants are even able to perform physical activities like walking and cycling! This wearability makes monitoring prefrontal brain oxygenation of elderly, children and vulnerable participants comfortable and easy. The device is connected with a long-ranged Bluetooth antenna to the laptop and incorporated with an integrated movement sensor, making the Brite Frontal suitable for multiple research purposes, such as:

- Brain oxygenation monitoring
- Sports science
- Cognitive studies
- Psychological research
- Hyperscanning, and more

Unexpectedly easy fNIRS hyperscanning setup

Hyperscanning is defined as simultaneously measuring the brain activity of multiple subjects. Social interactions are a crucial part of human life and understanding the neural underpinnings of it is a challenging task. Thus, measuring brain activity and interconnectivity in multiple participants at the same time gets increasingly important.

OxySoft, our NIRS monitoring software, allows connecting multiple devices simultaneously easily. Therefore, the data is perfectly synchronized and stored within one measurement file. This makes combining multiple Brite Frontal devices for hyperscanning purposes perfectly easy.



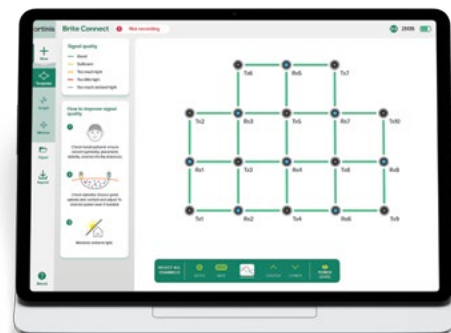
3D digitization & synchronization

Polhemus Viper and Patriot devices are well-known in the neuroscience world for precise digitization of sensor positions. In combination with the Brite Frontal, you can measure the exact location of the optodes on your participant's head within OxySoft.

With our OxySoft 3D extension you will benefit from a purely integrated solution, which guides you through the digitization process.

Brite Connect

Brite Connect offers an intuitive and visually appealing solution for fNIRS data acquisition, ensuring exceptional data quality and compatible with all Brite family devices. Featuring the Signal Quality Index (SQI) for precise data accuracy and a repair function to recover data during wireless interruptions, Brite Connect is designed for reliability. Exported data is saved in the standardized .snirf format, enabling seamless analysis with popular fNIRS toolboxes such as Homer and MNE Python. Brite Connect also supports Lab Streaming Layer, to easily stream in and out events in real-time.



What's in the box?

BRITE FRONTAL PACKAGE

- Brite Frontal incl. headband
- OxySoft and Brite Connect software
- Laptop with pre-installed software
- License key & Bluetooth dongle
- Universal micro-USB cable
- Battery charger
- User manual & quick start guide in EN
- Support in setting up your research

Technical specifications

TECHNOLOGY	Continuous wave Near-InfraRed Spectroscopy (NIRS) using the modified Beer-Lambert law
RELATIVE MEASURES	Oxy-, deoxy-, and total hemoglobin concentration changes
CHANNELS	24
SHORT SEPARATION CHANNELS	N/A
TEMPLATE & LOCATION	Fixed template 24-channel Frontal
INTER-OPTODE DISTANCE	30 mm
RECEIVERS	8 photodiodes
TRANSMITTERS	10 LEDs, each with 2 wavelengths
WAVELENGTHS	Standard 760 and 850 nm, custom wavelength possible
AMBIENT LIGHT CORRECTION	Proprietary algorithm to filter out ambient light
OPTODE HOLDERS	3 available heights to adjust pressure
HEADBANDS	Adults (XS/S, M/L)
DIMENSION	85 x 85 x 30 mm
WEIGHT	305 g including battery and headcap
ENVIRONMENT	Operating temperature: 10 - 35 °C
INDICATORS	Power, measuring, battery status, bluetooth
POWER	Up to 3 hours – extendable with our EverGo battery extension
SAMPLE RATE	Up to 75 Hz
ORIENTATION SENSOR	3-axis accelerometer and 3-axis gyroscope
DATA COLLECTION & STORAGE	Online, offline 100+ hours, automatic back-up of data
DATA ACQUISITION & ANALYSIS SOFTWARE	OxySoft (3D extension upgrade); Brite Connect
OPERATING SYSTEM	Windows 11
EVENTS	Online, offline or PortaSync
ELECTROMAGNETIC COMPATIBILITY	Compatible with TMS, EEG, EMG, ECG
HARDWARE SYNC OPTIONS	PortaSync, parallel cable, serial cable
SOFTWARE SYNC OPTIONS	LSL, DCOM (e.g. Matlab, E-prime, Presentation)

References to wireless fNIRS

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NIRS devices



MediBrite

The MediBrite is the first portable European CE-marked NIRS device according to MDR (EU) regulations. It is the perfect fit for clinical research.



Brite

Our most advanced wearable & flexible fNIRS device to measure brain oxygenation from any cortical brain region, providing multiple optode outlays with up to 27 channels.



PortaLite

Truly *lite* & advanced oxygenation monitoring device that measures local tissue saturation index (TSI), as well as oxy-, deoxy- and total hemoglobin concentration changes.



Brite Lite Frontal

Completely wireless 8-channel fNIRS device that is optimized for measuring prefrontal cortical activation in the brain.