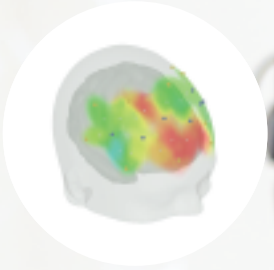
Brite

The forefront of wearable fNIRS devices



Measures oxy-, deoxy-, and total hemoglobin concentration changes.

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

Compatible with other techniques, such as EEG and tES.

Truly wearable and as flexible as you are, the Brite is a perfect fit for any study setting.

Get a quote

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Near Infrared Spectroscopy

NIRS, the technique which the Brite 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 makes it is possible to monitor the brain activity of your subject:

- Non-invasively.
- Continuously recording and feedback.
- Affordably and no disposables needed.
- Wirelessly, both indoors or outdoor.
- In easy setup for any environment, both indoors or outdoors.

WHAT CAN NIRS DO FOR ME?

- NIRS is used in many fields of research. NIRS measures the relative changes in the concentration of oxyhemoglobin (O2Hb), deoxyhemoglobin (HHb) and total hemoglobin (tHb) in biological tissue.
- Assuming the concentration of hemoglobin in blood is constant (during your measurement), the tHB can be used as a marker for blood volume.

The Brite is WHOA

Wearable...anywhere & for anyone!

The Brite MKIII is a truly portable fNIRS system, designed to be attached directly to the headcap. This enables participants to completely move freely without being tethered to additional equipment. Its lightweight wireless design and offline data storage make it ideal for studies in any environment—labs, clinics, or even outdoors.

The multi-power gain control adapts seamlessly to different skin tones, hair types, and cortical distances. Proven to be the most effective system to measure over hair, its innovative optode design ensures optimal contact with the scalp, even in challenging conditions.

Highly-flexible

Flexibility defines the Brite. Its adjustable inter-optode distances (10–55 mm) and customizable optode templates (up to 27 channels) allow researchers to tailor measurements to any cortical area. Choose the perfect template from the options in OxySoft or create unique configurations effortlessly with the Optode Template Editor.

The Brite is also designed for user-friendliness and quick setup. Optodes are equipped with number identification and color-coding, making it easy to follow the template overview both in real life and within OxySoft. Whether covering a large cortical area or targeting smaller regions, the Brite MKIII adapts to fit your research needs. Need more coverage? Combine multiple Brite devices in a MultiBrite setup for wearable full-head coverage or optimized hyperscanning configurations. The possibilities are endless!

Optimized

Delivered with OxySoft 4, the Brite MKIII features advanced tools like Signal Quality Index algorithms and ambient light correction, making it reliable in any environment—from controlled labs to dynamic outdoor settings. It also integrates seamlessly with multimodal systems like EEG, tES, and eye-tracking, allowing researchers to explore complex experimental setups. Explore our case studies for real-world applications!

Accurate

With reduced motion artifacts and improved dynamic range, the Brite MKIII ensures precise data collection. Its flexible inter-optode distance supports short-separation channels (SSC), crucial for extracting extracerebral signals. Plus, its on-head IMU sensor ensures unmatched motion data accuracy, making it a leader in portable fNIRS systems.

Applications

The Brite is a one of a kind NIRS device used by researchers all over the world for a variety of applications, such as:

- Brain oxygenation monitoring
- Sports science
- Cognitive neuroscience
- Psychology
- Hyperscanning, and many more

Visit our website to find our extensive library of publications using the Brite devices conducted by researchers from all around the world.

MultiBrite configuration

With multiple Brite MKIII systems, you have the flexibility to expand your measurement coverage by combining two or four devices seamlessly in our software. This configuration enables wearable and comprehensive monitoring of brain activity, with OxySoft synchronizing all devices into a single data stream for precise and coordinated measurements.

Whether you choose to use the Brite devices in a MultiBrite configuration, independently, or for hyperscanning (monitoring multiple subjects simultaneously), the Brite series exemplifies flexibility and adaptability for your research needs.

EXPAND THE MEASUREMENT AREA
Our range of optode templates eases your MultiBrite configuration:

DualBrite : with two Brite devices, you can achieve up to 54 channels simultaneously allowing multi-regional brain measurements.

TetraBrite : the four-Brite devices' configuration significantly expands the measurement area with 100+ channels. This configuration includes extended cables and a custom-designed body mount, ensuring participant comfort and enabling a fully wireless, mobile setup for seamless data collection.

Supporting features

SHORT SEPARATION CHANNELS

The Brite's multipower gain control feature allows seamless switching of a channel from a standard distance (30 mm) to a shorter distance (10 mm). Looking to increase the number of short separation channels (SSCs) without compromising your standard channels? Upgrade to the Short Separation Channel Splitter, which provides up to 8 additional SSCs for enhanced measurement flexibility.

EEG & TES COMPATIBILITY

You can combine electroencephalography (EEG) and/or transcranial electrical stimulation (tES: tDCS, tACS, tRNS) with NIRS in one single headcap. Such combination allows clinicians and researchers to measure both cortical electrophysiological (EEG) and hemodynamic activity (fNIRS) before, during and after transcranial electrical stimulation in real-world settings.

KEY ACCESSORIES

Enhance your Brite system with key accessories: The Polhemus Viper, paired with OxySoft's 3D extension, ensures precise digitization of optode positions directly within the software. The Battery Extension Pack adds 4 hours of extra runtime for uninterrupted measurements. The Versatile Bio amplifier enables real-time analog (e.g., GSR, RESP, TEMP) and electrical (e.g., ExG, EMG) biosignals monitoring.

What's in the box?

Brite research package

Brite including Artinis headcap
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	Up to 27 with one Brite, or up to 54 channels with DualBrite and 100+ channels with TetraBrite
SHORT SEPARATION CHANNELS	Short channels at 10 mm with multipower switch
TEMPLATE & LOCATION	Any template for brain (anywhere on the head)
INTER-OPTODE DISTANCE	Recommended 30 mm (10-55 mm may be possible)
TRANSMITTERS	10 LEDs, each with 2 wavelengths
RECEIVERS	8 photodiodes
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 improve skin contact
DIMENSION	Control Unit: 85x85x30 mm. Headcaps available in multiple sizes: kids version (from 2 years old) & adults (XS - XL)
TOTAL WEIGHT	300 grams 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 150 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: including 3D extension and lab streaming layer (LSL); 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, LabStreamer
SOFTWARE SYNC OPTIONS	LSL, DCOM (e.g. Matlab, E-prime, Presentation)
NIRS + OTHER MODALITIES	We deliver the following packages: Brite + TMSi EEG package (24, 32, 64 channels, etc.) Brite + Enobio EEG package (8 channels and other options available) Brite + tES (STARSTIM)

**Can only be achieved when using a limited number of channels. When using the full set of optodes, sample rates of 25, 50 and 75 Hz can be achieved, depending on the configuration.*

References to wireless fNIRS

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Featured 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 Lite

A wireless & flexible fNIRS device for brain oxygenation measurements with up to 10-channel. Also available as an 8-channel device for measuring prefrontal cortical activation.

PortaLite

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

fNIRS-EEG package

Have a complete picture of brain activity with a fully integrated, wearable, or stationary, fNIRS-EEG package.