

BIOMIMIC™ PHANTOMS

Improving user experience with your wearables

INO

www.ino.ca

info@ino.ca



INO

Are you seeking a stable, robust and reliable substrate for your wearable characterization?

How do you currently ensure device-to-device calibration? How do you confirm measurement repeatability over numerous sensors? Can you easily verify your sensing penetration depth? What about measuring sensing resolution? Can you easily measure critical parameters such as signal-to-noise-ratio or channel crossover level?

Wearable success is highly dependent on user experience. In their reviews, wearable customers often cite problems with data accuracy, battery life (time to next recharge) and comfort. For new optical-based wearables and sensors, data accuracy challenges include ambient optical noise, source power, detector noise floor, skin tone, sensor location on the body, perspiration and body fat level.

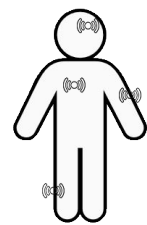
While human beauty lies in physical variability, this same variability leads to extensive data inconsistency between individuals. This makes data and signal recovery, especially in a diagnostic context, a tremendous challenge, one that requires statistical analysis and other strategies. Given the many possible sources of biological variability, it is critical to characterize, and ideally eliminate, all other possible sources of variability. A thorough characterization process is key to optimizing signal-to-noise ratio, which directly affects both data accuracy and battery life.

Our solid, industrial-grade, polymer-based Biomimic™ optical phantoms optimize measurement accuracy. Their properties can be adjusted to mimic tissue optical properties at the desired reference wavelength. In other words, optical properties can be chosen to match all known tissue types. Our optical phantoms are very stable over time and are ideal for long-term standardization throughout your product life cycle (development, production, sales and usage). They provide a reliable characterization standard with absolute accuracy for long-term instrument standardization and data consistency.

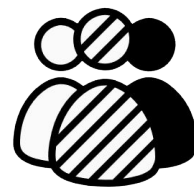
INO manufactures rectangular, cylindrical and multilayer optical phantoms as well as phantoms with occlusions to mimic underlying tissue inhomogeneity. Our phantoms can be machined into any conceivable shape or form.

INO's phantoms, as well as IoT capabilities and expertise in tissue light propagation simulation (3D Monte Carlo simulation), metrology and diffuse optics are key to the success of your next wearable design.

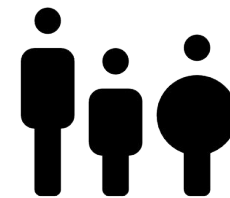
To find out more about how your business can gain with Biomimic™ optical phantoms, contact INO at info@ino.ca for a free consultation.



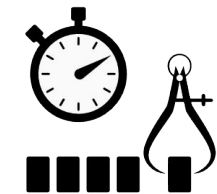
Sensor location on the body impacts diffuse optic signal



Our optical phantoms can replicate different skin tones



INO's optical phantoms and modelization can reproduce body optical properties



Optical phantoms are ideal for device-to-device standardization over long period of time