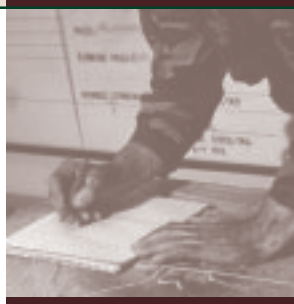
Photrodes™ for Medical Monitoring

Srico has developed innovative, optical sensors (Photrodes™) for electrocardiogram (EKG) and electroencephalogram (EEG) monitoring. The key operational component of the sensor device is a miniature, specially designed optical chip. While electronic chips use electrical current (electrons) optical chips use light (photons) for measurement and transmission of signals. Photrodes™ play the same role as electrodes – to detect and communicate brain or heart activity to the EEG or EKG recording device. However, the Photrodes™ measure the electrical activity of the heart or brain using state-of-the-art optical voltage sensing technology. They may also be used for electromyography (EMG) and electrooculography (EOG).

To measure heart rate (EKG), the small sensor is placed over the person's clothing enabling emergency medical personnel to make a quick patient assessment, particularly at scenes of mass trauma. As an EEG sensor, it may be used in situations where attaching a suite of conventional electrodes to the scalp with sticky gels would be uncomfortable, inconvenient, or time-consuming, such as for ambulatory monitoring, anesthesia awareness monitoring, alertness monitoring, sleep studies, pediatric monitoring, and emergency or critical medicine. The Photrodes™ eliminate the need for troublesome electrode attachment, and the sensor probe does not require exacting physical contact. Motion, skin moisture, and other characteristics typical of non-laboratory environments do not affect the Photrode™ device.

The Photrode™ technology is especially well suited in functional magnetic resonance imaging (fMRI) of the heart or brain. Because there are no electrical or electronic components inside the magnet room, there is no interference with the RF and magnetic fields of the scanner and no burn risk to the patient. Combined with fMRI, Photrodes™ have the potential to open the door to new brain and heart research, neurodiagnostics, and cardiodiagnostics. The all-optical technology offers uninterrupted, truly artifact-free capture of heart or brain activity.



PHASE III IMPACT

- 1 unit sold to date, generating $87,000 in sales.
- $1,050,000 in Government/DoD and non-DoD Research and Development funds.
- 2002 R&D-100 Award for one of the 100 most innovative products of the year.