

## Abstract

Patient biopotentials are usually measured with conventional disposable Ag/AgCl electrodes. These electrodes provide excellent signal quality but are irritating for long-term use. Skin preparation is usually required prior to the application of electrodes such as shaving and cleansing with alcohol. To overcome these difficulties, researchers and caregivers seek alternative electrodes that would be acceptable in clinical and research environments. Dry electrodes that operate without gel, adhesive or even skin preparation have been studied for many decades. They are used in research applications, but they have yet to achieve acceptance for medical use. So far, a complete comparison and evaluation of dry electrodes is not well described in the literature. This work compares dry electrodes for biomedical use and physiological research, and reviews some novel systems developed for cardiac monitoring. Lastly, the paper provides suggestions to develop a dry-electrode-based system for mobile and long-term cardiac monitoring applications