

Flexible & Wearable Electronics Application Experiments

c.p. aluart s.l.
technical fabrics

Company Profile

CPAluart Is a company that creates products in circular knitting using materials that fulfill the need of military, police, fire, risk Industries Including highperformance sports sectors.



Problem to be solved

Harsh conditions, such as high temperature or moisture environments outdoor and industrial workers face, can accrue risks for workers causing fatigue or even heat strokes that can lead to accidents on duty. Risks of mistakes increases with heat and moisture exponentially. Those mistakes can easily escalate into accidents with significant economic losses. Heat exhaustion causes a significant economic loss of labour in sick days and in healthcare costs.

Solution provided by SmartEEs

The prototype consists of a functional shirt with embedded ECG electrodes and body core temperature sensor, and an electronic module. The prototype is scalable in an easy industrial way for different sizes. The measured data are transmitted by BT to a mobile device and visualize by SmartWorkwear APP. The data are analysed and presented in the form of the physiological strain index, where is the stress level described from low to high.

Business model & impact

CP ALUART and Tecnalia created a shirt with an active monitoring system embedded on the first-layer comfortable garment to measure the physiological strain index (PSI) or alike. The first layer of personal protection equipment is produced from functional (antistatic, flame retardant) stretchable jersey textile material. Regarding to this requirement on the textile side, we have selected lamination technology for assembling the heart rate electrodes direct on the functional workwear. In addition, the electronic module has been developed, which includes the body core temperature sensor. It is clear to say that the business potential is very high.

