



SENSOR DESIGNS FOR E-SKIN BY PRINTED AND FLEXIBLE ELECTRONICS

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Background

Wearables devices in medicine are an arising technology that eases the access to a plethora of information about the human health and physical performances. In the latest years, many problems arose like improve their durability, battery life, sensibility and last but not least the users' comfort. In order to address the issues many research paths are pursued and among them printed electronics is a promising technique to develop lightweight and stretchable systems in form of a skin like devices.

Objectives

The aim of this work is the development of sensors and the relative wearable devices to provide different information on the physiological status of a human being in a continuous way.

Methodologies

Different sensor structures will be designed and developed by printed electronics technologies. Among them Aerosol Jet Printing will play a major role to explore different flexible/stretchable substrates.

Different test will be performed to fully characterize the sensors and then wearable frontends will be developed to provide an integrated system that can be worn for a long time period achieving a continuous monitoring.

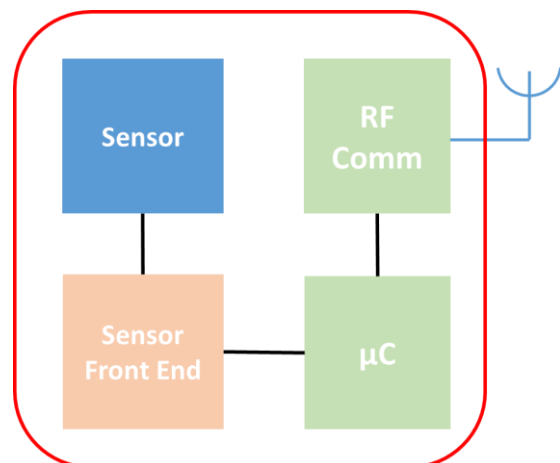


FIGURE 1. TYPICAL WEARABLE E-SKIN ARCHITECTURE.

Expected Results and Impact

After the development of novel sensors and their characterization in a controlled environment, those will be included in wearable devices that can be used to monitor continuously a person's parameters and thus help to understand different physiological conditions.