

DISTRIBUTED ICT FOR HEALTH AND WELLNESS

The need for small, user-friendly and portable medical electronic devices for health monitoring, assessment and diagnosis has been increasing recently. Also, the combined use of wearable sensors and Internet of Thing (IoT) is opening to a variety of new applications for health and wellness. Additionally, the biomedical and MedTech industries for devices that would be able not only to diagnose but also to correct the medical issue is ever expanding, proposing medical tools capturing data with far greater ubiquity and regularity than has been traditionally possible. Just to name a few devices, we can mention the implants, prostheses, point-of-care and lab-on-chip, integrated systems-on-chip for health monitoring, wearable and wireless medical devices to perform various functions. Not lastly, we are also referring to electronic devices dedicated to wellness, such as vital signs and physical workout monitoring. With the desire for such small and portable devices, there has come the need for the electronic and corresponding integrated circuits to cope with such demand, and to be able to fulfill low power consumption requirements, optimum data transfer, low noise, low frequency, biomedical compatibility and wearability. In this case, the design of the RF transmission blocks, front-end, both analog and digital circuits for acquiring and processing the biological signal is essential, as well as the possible implementation of solutions for energy harvesting aiming to long battery autonomy. At this technical track, we invite the relevant papers on the subject of integrated circuits development in medical electronic devices for health and wellness. This session will be devoted to presenting the recent advances in the field of research presented above.

Maria-Alexandra Paun

EPFL