

COMPUTER AND CONTROL ENGINEERING

MUR DM 117/SAT - Non-invasive and low-cost solutions for health monitoring of new-borns

Funded By	MINISTERO DELL'UNIVERSITA' E DELLA RICERCA [P.iva/CF:97429780584] Politecnico di TORINO [P.iva/CF:00518460019] Sleep Advice Technologies s.r.l. [P.iva/CF:11954660012]
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Context of the research activity	<p>The PhD program focuses on developing sensing technologies and algorithms for monitoring premature new-born child. Premature new-born requires continuous monitoring to collect physiological parameters, and non-invasive solutions are mandatory to cope with their conditions. Existing solutions, both in terms of hardware and software, are inadequate as either not applicable as too invasive or inaccurate.</p> <p>Progetto finanziato nell'ambito del PNRR - DM 117/2023 - CUP E14D23002020004</p>
Objectives	<p>The PhD focuses on the development of hardware/software solutions for continuous, non-invasive, monitoring of premature new-born. Due to the specificity of the subject to be monitored, which may not bear wearing complex equipment, innovative monitoring solutions are needed. The idea is to evaluate/develop special low-intrusiveness contact-based sensing solutions (e.g., wearable patches) as well as contact-less solutions (e.g., camera to perform imaging-based photoplethysmography, and doppler radar) to monitor the physiological state of infants during sleep, and to identify early signals of potential pathologies.</p> <p>The PhD programme is co-sponsored by Sleep Advice Technologies under DM117.</p>
Skills and competencies for the development of the activity	MATLAB or Python or C/C++ programming