

RESEARCH PROJECT 2022-2023

Department/Area

Electronics, IIT

Title/Name

Biomolecule detection in organic dissolutions with a submerged dielectric resonator biosensor and machine learning techniques

Abstract/Description

Dielectric resonator biosensors are a very promising technology due to their label-free detection, low-cost materials, and non-destructive interaction with the sample. The objective of the proposed project is to test a biosensor design with biological dissolutions such as milk, juice, or soy milk. The measurements will be analyzed with ML techniques to maximize biosensor accuracy. The results will be used to delimit the full potential of this technology for biomedical or food industry applications.

Prerequisites

Required	Electronic measurements
Recommended	It would be nice to have some knowledge of machine learning, but it could be learned during the project.

Supervisor(s)/Tutor(s)

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Structure

Format	Semester (extensive, 15 weeks), Summer (intensive, preferably 8 weeks), Both are available
Workload	200 hours (8 ECTS)
Students	1

