

## SUMMER INTERNSHIPS 2017

**TITLE: pH-Lactate sensor measurements for assisting childbirth delivery**

**DESCRIPTION (Objectives, tasks, materials, equipment,...):**

The main objective of this project is **to develop a continuous, low cost and disposable pH/lactate-measuring device**. To accelerate preclinical development of this novel device, we also propose to evaluate its degree of agreement with the current standard, i.e. biochemical determinations of fetal calotte blood.

The superior goal of the program is to implement an optical system for measuring fetal lactate concentration and pH during labour in a non-invasive manner. The students will work in the framework of the Nanoengineering Group of CIC nanoGUNE to carry out the following tasks:

- Optical and electrical measurements of different pH values and lactate concentrations to know the sensitivity and specificity of the methods chosen
- Characterization of the measurements in animal blood and animal tissue
- Design of an integrated probe for pH and lactate measurements

**SUPERVISOR:** Dr. Andreas Seifert, CIC nanoGUNE

**SUITABLE FOR:** Engineers, physicists, chemists

**SHORT DESCRIPTION OF THE GROUP:** The Nanoengineering group focuses on research at the interface between fundamental nanoscience and applied engineering, in particular in the area of biomedical microsystems. The aim is to bridge the gap between physical sciences and industrial as well as clinical applications by introducing nanotechnology to finally gain added value for novel medical microsystems and mesoscopic devices.

**TIMETABLE:** 9:00-13:00, 15:00-17:00

**COMMENTS:** Internship duration from 1.5 to 2 months (to be discussed). Applicants should send an email to [jm.pitarke@nanogune.eu](mailto:jm.pitarke@nanogune.eu) including their academic record.

More info: <http://www.nanogune.eu/summer-internship>

Deadline for applications: 5 February 2017