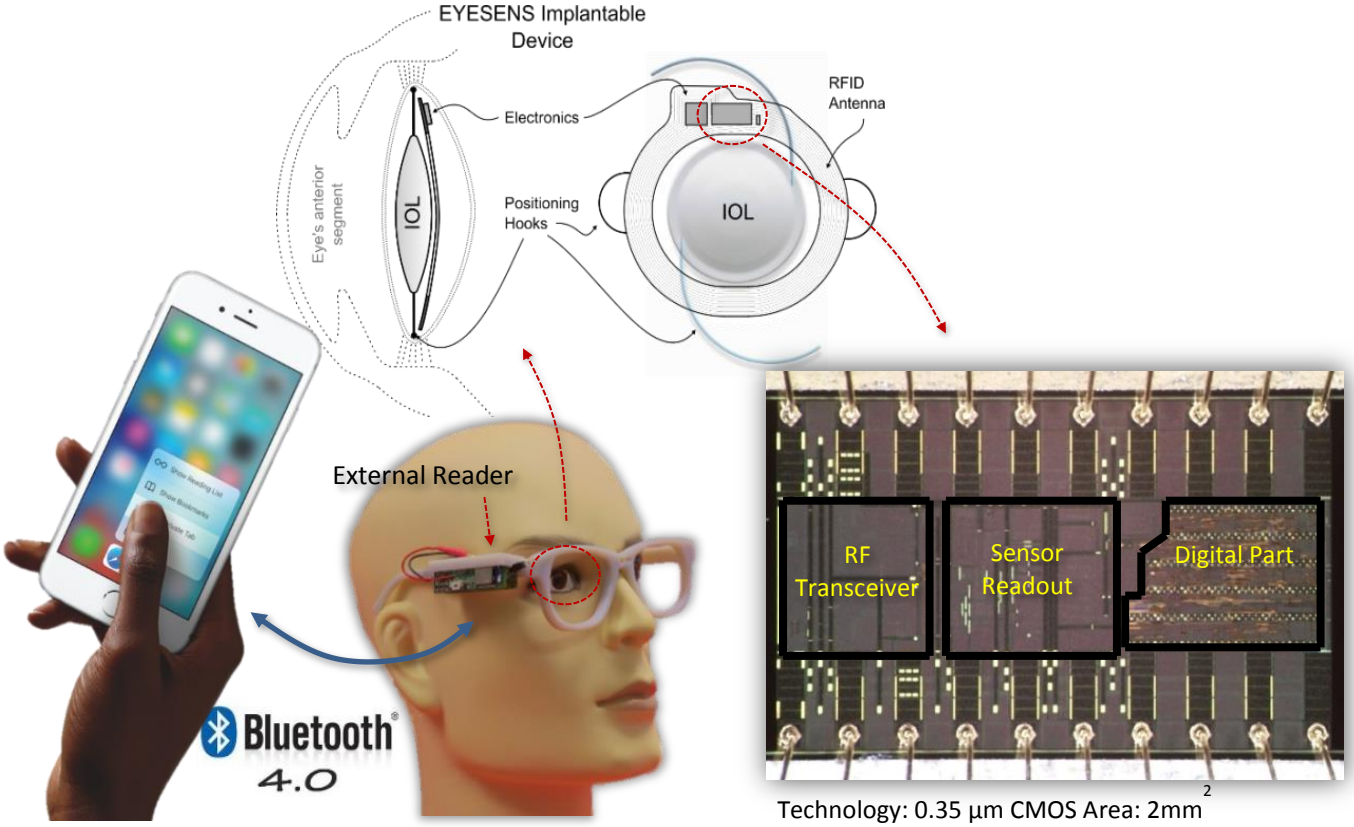
University of Applied Sciences and Arts of Southern Switzerland
Department of Innovative Technologies
Institute for Systems and Applied Electronics

SUPSI

EYESENS
Implantable System for Intraocular Pressure Measurements



The problem

Glaucoma refers to a group of diseases providing gradual, irreversible loss of vision and, if untreated, can lead to blindness. The inability to adequately manage this condition is tight to the difficulty to identify the onset of the degenerative process and to optimize the medical therapy.

The project

Diagnosis and management of glaucoma is significantly associated with intraocular pressure (IOP). High IOP and large IOP variations are actually the leading risk factor for glaucoma. The detection of the IOP's variation due to circadian rhythm is a valuable parameter for therapy assessment and glaucoma management. The project aims to design and develop an implantable medical device, composed by an application specific integrated circuit (ASIC) and MEMS pressure sensor, which precisely, directly and continuously monitor the patient's intraocular pressure in order to improve the medical management of glaucoma.

The result

The result is an ASIC comprising all the necessary sensor's readout and telemetry RFID circuitry; an external reader, small enough to be mounted on a glass frame, which powers and read out the telemetry data from the implantable device, and a smartphone APP which interfaces with the external reader and the medical device (ASIC).

Contact information

Andrea Salvadè
andrea.salvade@supsi.ch

Funding agency

Commission for Technology and Innovation CTI

Partners

Oculox Technology Sagl
Swiss Federal Institute of Technology Lausanne (EPFL)

Research domain

3 Innovative products and processes
5 Intelligent systems for knowledge and communication
6 Social systems and public health