The VoiceMint: an electronic voice prosthesis

Introduction
A mint shaped electronic voice prosthesis is under development for patients that have lost the ability to use their vocal cords. Sometimes temporarily after a common cold or after vocal cord surgery or sometimes permanent after tumor surgery has removed their entire voice box. The VoiceMint is a simple piece of technology that allows them to speak again. The battery powered device is put into the mouth between cheek and teeth like a mint and upon opening of the mouth (detecting incoming light) introduces a voice sound into the mouth that the wearer can than articulate into speech. The VoiceMint is a pragmatic and practical device: low priced components, easy to wear or take out, not perfect in all condition but mostly very useful.

The project has both a very practical engineering part, which revolves around improving the current technology, as well as a scientific part revolving around finding the parameters that provide the basis for intelligible audio samples to be used by the mint.
During the internship, external experts will have to be contacted and the ongoing funding submissions will be an interesting aspect as well.

**Main competency development targeted in:**
IC; IT; UFP; DMM; DRP

**Design challenges and research questions**
- Prove the feasibility of the technology: test its effectiveness and optimize the design
- Deliver a demonstrator

**Stakeholders**
UMCG (University Medical Center Groningen)
SBGG (Groningen Business Generator Foundation)
TUe innovation lab

There are already some interested medical parties, but more need to be addressed!

**Required Skills**
- Arduino building and programming
- Scientific thinking and writing (to be learned)

**More information**