Master’s thesis project: 
Building a vibrator for bone conduction use – biomedical & sound.

Background
Bone conduction has been around for many decades and the technology was matured in the early days at Chalmers. This technology today helps hundreds of thousands of people to hear every day. The motor for bone conduction is the vibrator, which transforms an electrical signal to mechanical vibrations. A vibrator design can vary from piezo driven, electro-magnetic balanced and unbalanced, moving coil principle, etc.

Aim
The purpose of this thesis work is to test different actuator principles by design and physical prototype or by simulation. The aim is to study different designs and think of ways of improving them in terms of cost, size or performance.

Preconditions
Student background in life science or mechanical engineering or sound and vibration or material science or micro-mechanical prototyping or testing are good as a technical background. Knowledge about material properties, electrical design and build, general experimentation and testing are welcomed. You should be able to understand bone conduction on a high level i.e. no detailed pre-knowledge required.

Results
The expected result should be some physical builds or simulation results in order to evaluate different designs. Thesis report written. Reward 20 000 SEK for completed work.

Number of students
We recommend one student for this project but that is not a requirement.

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