

**Topic:****Online Sound Control of Hearing Instruments based on Multimodal User in the Loop Feedback**

Hearing instruments like hearing aids, cochlear implants but also audio devices are typically adjusted for optimal sound perception adjusted to the listening condition. Only limited and/or inconvenient control is given in the listening condition itself. This PhD project focuses on new multimodal user interaction strategies to control hearing instruments as well as audio devices. Preferably, the strategies investigated will unobtrusively put the user in the control loop. Brain computer interfaces are one option to do so.

The project is contractually linked to the University of Oldenburg and will be carried out at the Fraunhofer research group Hearing, Speech and Audio Technology ([www.idmt.fraunhofer.de/en/hsa](http://www.idmt.fraunhofer.de/en/hsa)) which offers an attractive scientific and application oriented environment in an international team of scientists and access to state-of-the-art acoustical equipment and labs.

**Duties of the candidate:**

- To use, develop and investigate multimodal intended (e.g., gestures) and unintended (e.g., BCI) human machine interaction strategies to control sound of hearing instruments and audio devices
- To design, carry out, and analyse subjective listening tests with normal-hearing and hearing impaired test subjects
- To prepare scientific manuscripts

**Desired experience of the candidate:**

- Master degree (or equivalent) in psychology, physics, electrical engineering or a related field
- Excellent grades and preferably a solid background in psychoacoustics, audiology, human machine interaction and/or signal processing are required
- Familiarity with scientific tools and programming languages such as MATLAB or C, as well as good English language skills are desirable.
- Research experience in any of the mentioned fields and a strong interest in interdisciplinary and application-oriented work is desirable.

Applications must include a letter of motivation directly related to this PhD topic, CV, a copy of the university diplomas/transcripts and – if applicable – a list of publications at the address below. Position can be started immediately.

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