



EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN



CSC-Tübingen PhD Scholarship Program

2026/2027 application round: prospective PhD positions at the University of Tübingen

Faculty: Faculty of Medicine

Institute / Section / Subject: Neurophysiology

Supervising Professor(s): Prof. Dr. Justus Marquetand

About the Supervisor(s): A physician-scientist and research group leader at the Hertie Institute for Clinical Brain Research, University of Tübingen. Our group research focuses on clinical neurophysiology, neuromuscular disorders, magnetomyography, and quantum sensor technologies, with particular emphasis on the development and clinical translation of contactless MMG methods for neuromuscular assessment and monitoring. Further information: <https://www.hih-tuebingen.de/en/research/neural-dynamics/marquetand-lab>

Specification/Project title: Mobile contactless muscle diagnostics using Quantum sensors for patient bedside assessment

Topic Description: Neuromuscular diseases can progressively weaken muscles, making reliable and repeatable assessment important for monitoring disease progression and treatment response. This project explores a mobile, contactless method that uses optically pumped magnetometers (OPMs), highly sensitive quantum sensors, to record the weak magnetic fields generated by active muscles. Measurements in healthy participants and patients will be used to determine how reliably the method *reflects neuromuscular function and to develop a novel, contactless neurophysiological diagnostic test. The study will also evaluate its use at the patient's bedside, with the long-term aim of supporting patient-friendly assessment and follow-up in clinical care.*

Intended Degree: Dr. med.

Type of the PhD Study: Full-time (complete doctoral studies at the University of Tübingen)

Required Degrees and Qualifications: A Master's degree in neurology or medicine is required. Applicants should have an interest in clinical neurophysiology and biomedical signal analysis. Experience with magnetomyography or optically pumped magnetometers is advantageous but not required. Good English skills and the ability to work independently are expected.

Language Requirements: IELTS 7.0 (C1)

Notes: