



PhD position available at ARTORG Center, University of Bern

Bladder Pressure-Volume measurements to improve urodynamic assessment

A new PhD position is now open in the Urogenital Engineering group (UGE) of the ARTORG Center for Biomedical Engineering Research (University of Bern, Switzerland). The UGE group focusses on the development of urological devices and methods for the diagnosis and the treatment of urological disorders (e.g., overactive or underactive bladder, urinary incontinence, and kidney stones). Our research is in close collaboration with the Department of Urology of Bern University Hospital (Prof. F. Burkhard). Other partners of this PhD project are: [CSEM](#) (Swiss Center for Electronics and Microtechnology) and the Experimental Surgery Facility (University of Bern).

Lower urinary tract dysfunctions (LUTDs), such as overactive bladders, are not easily diagnosed with conventional urodynamic assessment. In a recent ex-vivo feasibility study, we proved that pressure-volume measurements of the bladder (obtained using catheters that are normally used for cardiac research) could be useful to facilitate and improve LUTDs diagnosis. The proposed PhD project aims at refining and expanding this technology to bring it closer to the clinical urology setting. This effort will involve experimental investigations, theoretical analysis, and simulations of the underlying fluid mechanical processes and will require close interaction with our research and clinical partners.

Candidates for this position are expected to have the following skills and expertise:

- MSc in Biomedical Engineering, Mechanical or Electrical Engineering (or related fields)
- Experience in experimental and/or computational fluid mechanics (e.g., Comsol, OpenFOAM)
- Experience in electronics and programming is considered a plus (e.g., MATLAB/Python)
- Good project management skills and academic writing skills in English
- Ability to collaborate in an interdisciplinary team of medical doctors, engineers, and computational scientists

The position is fully funded for three years, starting date on June 1st, 2024.

Please submit your complete application (Curriculum Vitae and motivation letter) to Diana Bethge (email: info.artorg@unibe.ch), specifying 'PhD Urogenital Engineering' in the subject.

Closing date: **February 2nd 2024**

For more information on the position, please contact:

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