Master Thesis proposal:
Compact Flexible Soft UWB antenna design and System Characterization for stroke diagnosis

Background
Medfield Diagnostics is a medical device company sprung out of Biomedical Electromagnetics at Chalmers University, with the aim to develop, market and sell diagnostic instruments based on microwave technology. The company is currently in a product development phase performing a clinical trial at Sahlgrenska University Hospital with a prototype for brain monitoring.

The long term aim is to improve diagnosis and treatment of patients with acute stroke and brain injuries by developing the microwave diagnostics techniques. In stroke, blood supply to the brain is interrupted, depriving the cells of oxygen and the cells are consequently damaged or dies. An early treatment after a stroke is extremely important since the longer the brain cells are deprived of oxygen, the more damage they will suffer. Microwave based diagnosis have the strength to be small enough to fit in to the emergency department and ambulance enabling much quicker diagnosis than existing techniques.

Objective
The purpose of this Master thesis project is to design a compact, low-profile, flexible, soft, directional ultra-wideband (UWB) antenna operating in the frequency band of 0.5 – 3 GHz for the stroke diagnosis. A system characterization of the antenna’s performance will be carried out, which including simulation, measurements and evaluations.

Candidates should have knowledge in electromagnetism and antenna design.

The project will be in collaboration with Medfield Diagnostics, Chalmers University and Sahlgrenska University Hospital. The project is suitable for one or two students. Compensation will be discussed between the student and the company.

Please apply for the project by sending an email to contact persons, with your CV, Chalmers official transcript of records and telephone number.

Contact
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