

Master Thesis: Wireless Robotic Materials

Background and Research Area Robotic materials are multi-functional composites that tightly integrate sensing, actuation, computation and communication to create smart composites that are able sense their environment and change their physical properties such as color, temperature, stiffness etc. The materials include a large number of tiny sensors and actuators that communicate wirelessly to achieve their task (such as shape or property adaption).

Thesis Objective and Content This is an open thesis (or several theses) that can go in several directions. The main task is to explore this field by designing and implementing a simple prototype (or rather series of prototypes) using existing technology or series of prototypes. A simple example could be an object that changes its color based on a applied pressure.

Candidate Requirements and Application For this thesis we are looking for highly motivated and creative students with solid knowledge in electronics / hardware design and low-level programming skills interested in developing prototypes.

The thesis can be started soon. For the application, please provide us with a CV, your courses and grades. In addition, we appreciate an article, paper, thesis or other relevant documents you have written in your education in order to judge your ability to express yourself in English. Please send your application to thiemo.voigt@it.uu.se as a set of pdf files.

Material See <https://arxiv.org/abs/1708.04677>

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