In partial fulfillment of the terms for obtaining the PhD degree, Rikke Hagensby Jensen will give a lecture on the following subject:

**Interaction Design for Sustainable Energy Consumption in The Smart Home**

on Monday the 29\textsuperscript{th} of October 2018, 13:00, in room 0.2.13 at Selma Lagerlöfs Vej 300

**Abstract:**
There is little doubt that human demand for electricity has environmental consequences for the climate on earth. One response to combat increasing electricity demand and CO2 emissions is to research and develop smart home technology aiming to change how people consume electricity in their homes. This PhD project contributes with understandings of how smart home technologies can be designed to see how these are going to be sustainably beneficial for people in everyday life.

To this end, this PhD project investigates what characterises interaction design of smart home technology aiming to instigate sustainable energy consumption in the home and how such technology shapes sustainable energy consumption in everyday life. To structure this research enquiry, the PhD project explores different design imaginations of possible sustainable futures in the smart home and conducts studies of people using such technologies in concrete, everyday practices. The PhD project reports on three studies that each explore opportunities in smart home technology through different design concepts (assisted shifting, provocation and the desirable concept of hygge) that are manifested in concrete designs. Each design intends to change how households consume energy sustainably by intervening in everyday energy-consuming practices.

The findings of the studies show that each design concept is distinctive in its characteristics. Assisted shifting focusses on instigating sustainable energy consumption – conveniently and effortlessly – assisted by automated and intelligent technology. Provocation focusses on the disruptive and unexpected elements in the interaction design to challenge households to reflect and adapt to new routines. Hygge challenges existing smart home practices by proposing alternative ways to achieve desirable, enjoyable and aesthetically pleasing experiences in the smart home that also happens to be less energy-intensive.

The empirical findings of this PhD project demonstrate that the appropriation of technologies aiming to instigate sustainable energy consumption in everyday life is more complex than to develop and diffuse ‘smart energy’ technologies to the public. Households embed smart home technologies in everyday day practices in ways that are meaningful, enjoyable and desirable, which may actually end up undermining people’s desire to live sustainably. The results of this PhD project contribute with imaginative design futures for the desirable and sustainable smart home and understandings of how such design shapes practices and energy consumption.

This PhD project is sponsored by the DICYPS research centre (http://www.dicyps.dk) funded by Innovation Fund Denmark. The aim of this research centre is to use software and data of complex cyber-physical systems to develop smarter and user-friendly solutions that benefit the individual and the society.
Members of the assessment committee are Associate Professor John Stouby Persson, Aalborg University, Professor Kaj Grønbæk, University of Aarhus, Assistant Professor Lenneke Kuijer Eindhoven University of Technology. Professor Jesper Kjeldskov and Associate Professor Mikael B. Skov are Rikke Hagensby Jensen's supervisors. Moderator Professor Peter Axel Nielsen.

All interested parties are welcome. After the defence the department will be hosting a small reception in cluster 5.