

KARLSTAD UNIVERSITY SWEDEN



THE CITY OF KARLSTAD

- Is situated in a delta on the northern shore of Lake Vänern where the river Klarälven branches into many arms before flowing into Lake Vänern
- Has about 87,000
- Close to larger cities like Gothenburg and Stockholm in Sweden and Oslo in Norway



Faculty of Health, Science and Technology

- Environmental and Life Sciences
- Health Sciences
- Engineering and Chemical Sciences
- Engineering and Physics
- Mathematics and Computer Sciences



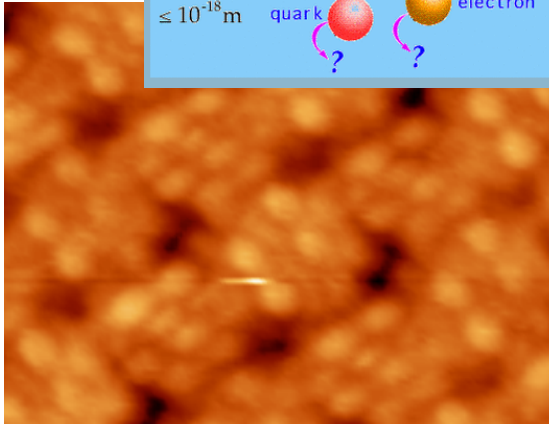
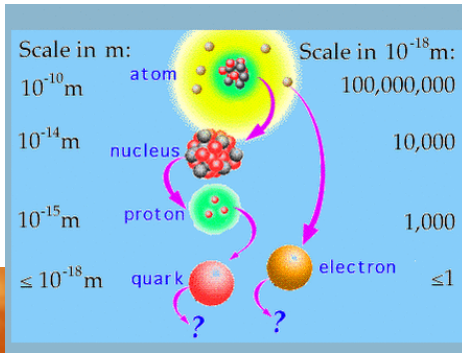
Research

- CCS, Centre for Climate and Safety
- CPS, Centre for Public Safety
- Computer Science
- CMM, Characterizing and modeling of materials
- Pro2BE, Processes and Products for a circular BioEconomy
- PSC, Paper Surface Centre
- River Ecology
- SMEER, Science, Mathematics and Engineering Education Research
- SOLA, SOLution-borne materials for organic electronic Applications



Research

Physics and Engineering



Materials Physics:

Nanomaterials, Polymer solarcells, Carbon nanotubes, Molecular electronics,

Materials Engineering:

Tool steel, tribology, fatigue

Mechanical Engineering:

Solid mechanics

Theoretical Physics:

Particle physics and Cosmology

Electrical Engineering:

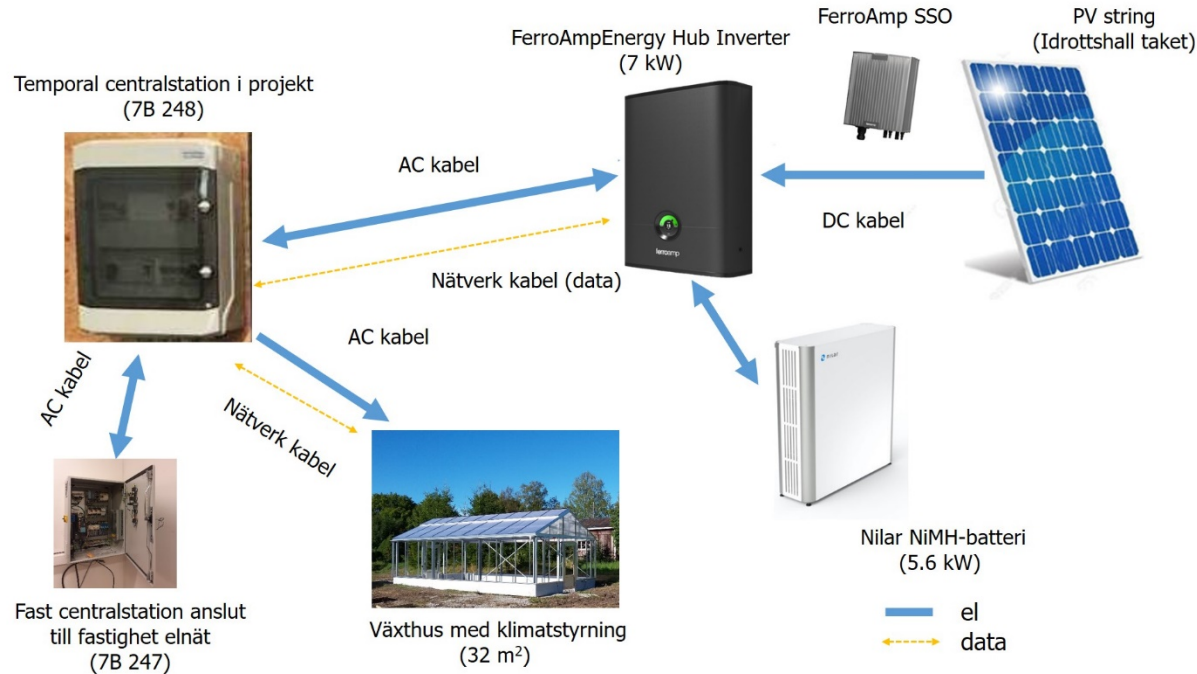
Energy Systems and Renewables, Applied Mathematical Modelling, Robotics and Automation

Physics and Technology Education research:

Teaching and learning studies



Intelligent lighting control system for greenhouses



The project will develop an intelligent control system to optimize the operation of lighting systems in greenhouses with a high proportion of local renewable energy using adaptive control methods, Artificial Intelligence (AI) algorithms and optimization of built-in lighting control. In this project, special focus will be given to design and implementation of forecasting algorithms for intelligent lighting control.



goodtech

Integration of vision-based control and multimodal interfaces for a collaborative industrial robot

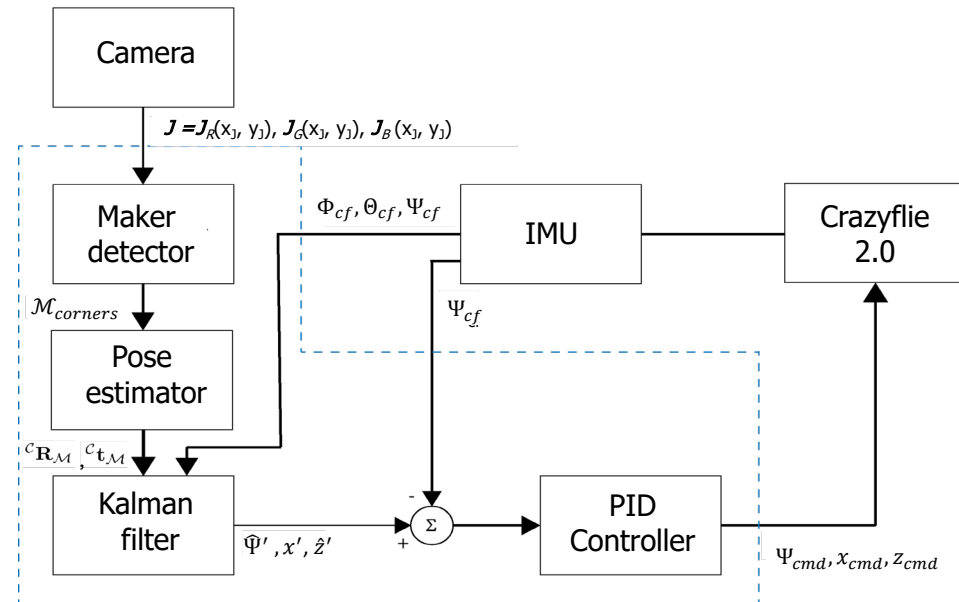
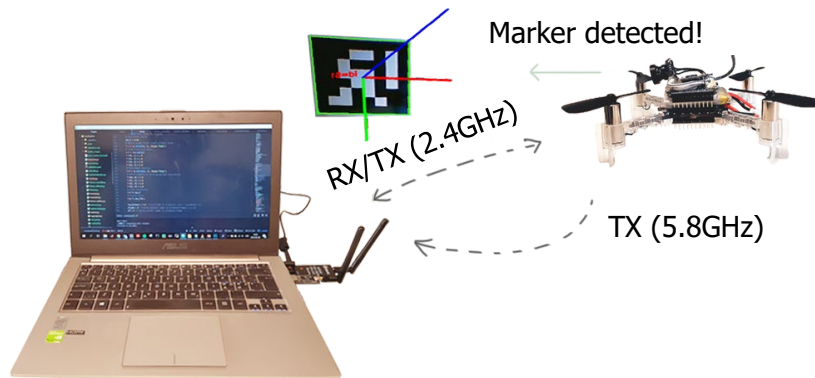


ABB:s YuMi®
(photo: ABB.com)

In this project, we are aiming to enable an industrial robot to collaborate with humans in order to accomplish a task, where different kind of sensors and multimodal interfaces can be integrated. In this project, special focus will be given to design and implementation of an application for a collaborative industrial robot.



Vision-based control of a micro-aerial vehicle



This research aims to develop an automatic UAV-based indoor environmental monitoring system for the acquisition of data at very fine scales to detect rapid changes of environmental features of plants in greenhouses grow. In this project, special focus will be given to the improvement of the current off-board distributed control system as the embedding of environmental sensors

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