Renewable Energy Research Group (Wind Power Technology Research)

The Renewable Energy Research Group at **Department of Energy Technology, Aalborg University, Denmark** combines the expertise in **electrical machines**, **power electronics** and **power systems**, operating extensively in collaboration with industry and other national and international organisations to attend the important technical issues related to the **wind power** industry. There are currently more than 20 researchers from many countries in the group. The research group has more than 360 publications in the technical field. These publications have been cited over 6500 times from researchers all over the world.

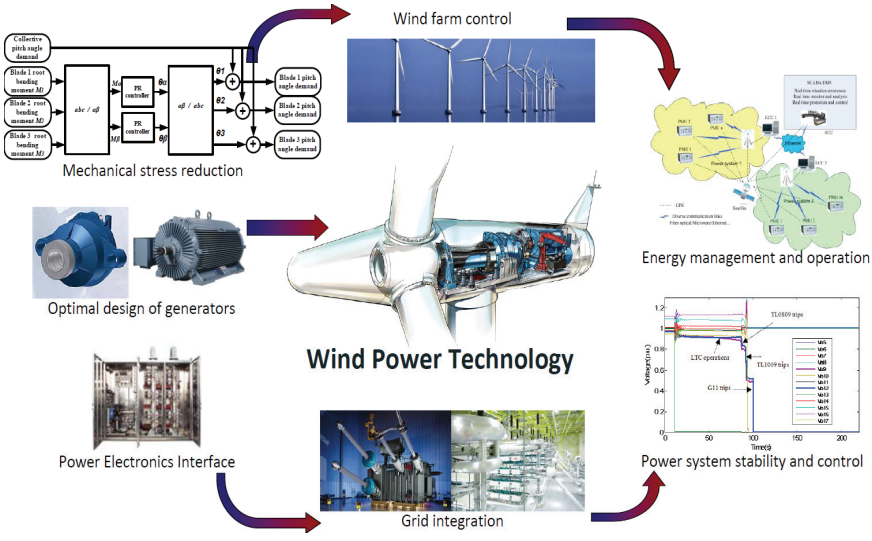
Selected Research Project

The total responsible budget of recently funded research projects in the group is approximately **9 Million EUR**.

- Innovative Wind Conversion Systems (10-20MW) For Offshore Applications (EU-FP7-INNWIND)
- Comparison of Different Generator Configurations (EU-FP6-UPWIND)
- North Sea Region Programme POWER CLUSTER (EU-Project)
- Norwegian Centre for Offshore Wind Energy (International Project)
- Research on DC Network Connection with a Novel Wind Power Generator System (National Project)
- Dynamic wind turbine model - from wind to grid (National Project)
- Development of a Secure, Economic and Environmentally-friendly Modern Power System (National Project)
- Operation of power systems with large scale of wind power and energy storage systems (National Project)
- Modelling and Simulation of Wind Power & VSC-HVDC and Its Application in Offshore Wind Power Integration (Sino-Danish RED Project)
- Research on Modelling and Simulation Technology for Large-Scale Wind Turbine (Sino-Danish RED Project)

Core Research Areas

- **Pitch Control/Stress Reduction**
- **Optimal Design of Generators**
- **Power Electronics Interface**
- **Wind Turbine Control**
- **Wind Farm Design and Control**
- **Grid Integration and Control**
- **Wind Power Interaction with Grid**
- **Power System Stability and Economics with Large Scale Wind Farms**



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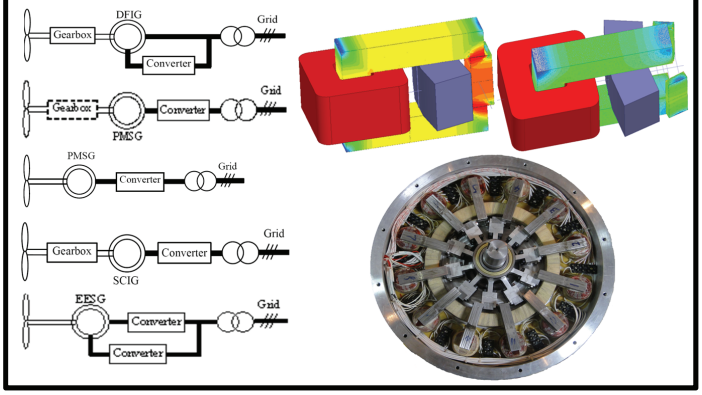
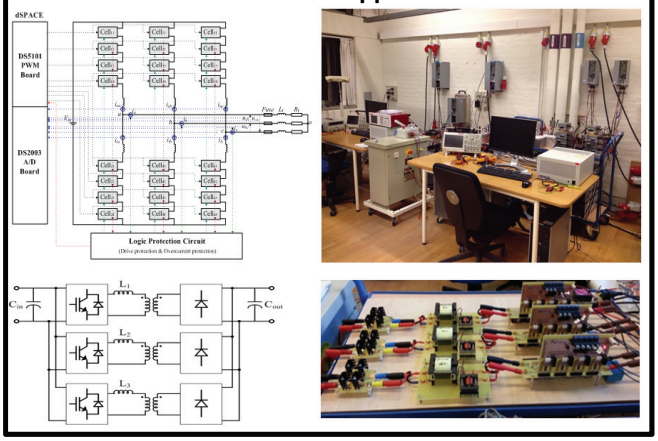
Publications: http://homes.et.aau.dk/zch/publications.htm

Wind Power Conversion System and Wind Farm

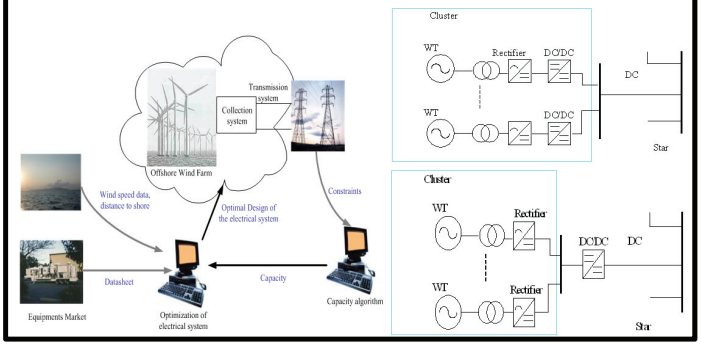
Wind Power Generator Design, Optimization and Control



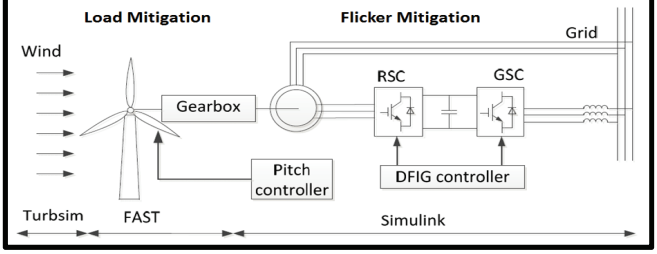
Innovative Power Electronic Systems (10-20MW) for Offshore Wind Applications



Wind Farm Optimization

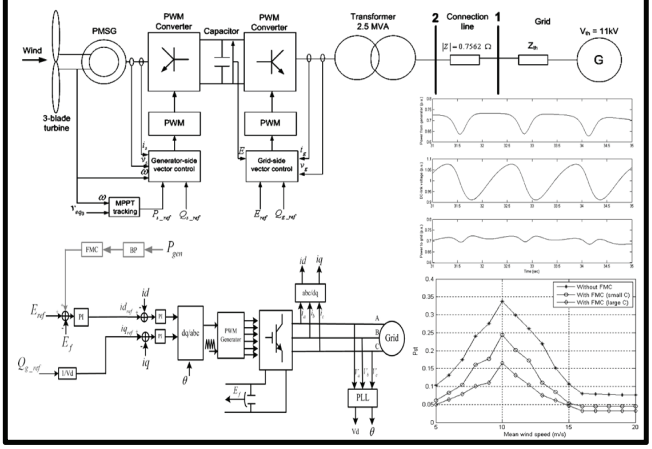


Individual Pitch Control to Mitigate Fatigue and Flicker of HAWTs

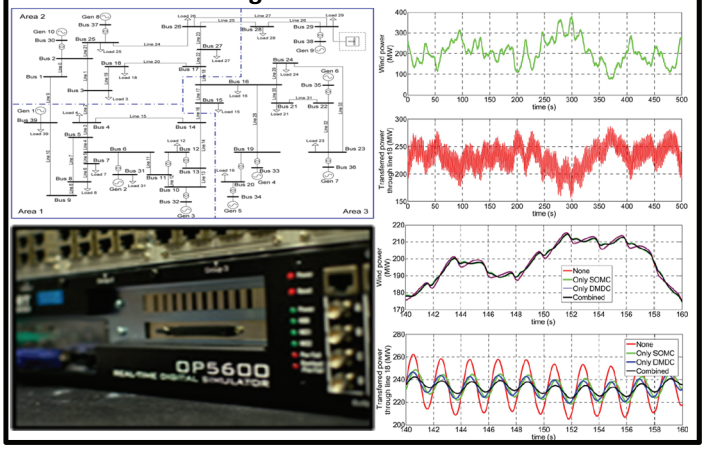


Wind Power Interaction with Grid

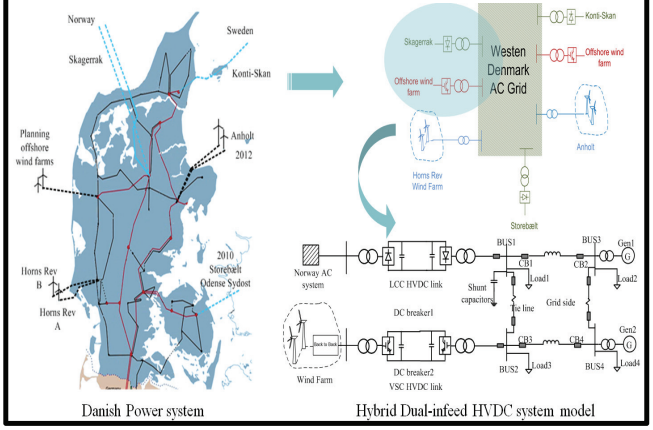
Power Quality and Grid Code Compliance



Wide-area Coordination Control of Power Systems with Large-scale Wind Farms



Hybrid Multi-in Feed HVDC system with Large Scale Offshore wind Farms



The Impact of Wind Power on Power System Stability, Economics and North Sea Super Grid