

# ANTENNAS, PROPAGATION AND MILLIMETRE-WAVE SYSTEMS



## THE ANTENNAS, PROPAGATION AND MILLIMETRE-WAVE SYSTEMS (APMS) SECTION AT AALBORG UNIVERSITY DEPARTMENT OF ELECTRONIC SYSTEMS TECHNICAL FACULTY OF IT AND DESIGN

The section conducts research on forms of wireless communication in three areas: design of circuits to process signals, design of antennas to transfer signals, and studies of how signals change in the radio environment.

### RESEARCH

#### KEY RESEARCH AREAS

APMS implements electronic circuits to convey and reconstruct signals, and studies performance of antennas in compact devices in realistic use.

APMS characterizes and models radio propagation in different indoor and outdoor scenarios.

#### KEY RESULTS

Examples include:

- › Sensor technology on wind turbine blades to reduce the cost of wind energy
- › Antenna systems for compact satellites which enable global satellite communications
- › Mobile phone requirements and testing for 5G and beyond
- › Investigation of EM Exposure in firefighters

### COLLABORATION

#### WHO BENEFITS FROM OUR RESEARCH

APMS has strong collaborations with leading companies and top universities in wireless communications, e.g. 5G and satellite communications.

### EXTERNAL PARTNERS

Nordic Council of Ministers, Danish Energy Agency (Energistyrelsen), Danish military, Commission for Communications Regulation, Ireland, European Cooperation in Science and Technology (COST), Sony Mobile, Intel Mobile, Keysight/Agilent, LM Wind Power, Huawei, Gomspace, NTT DoCoMo, Telenor, Bang & Olufsen, Motorola, WiSpry / AAC Technologies, Schmid & Partner Engineering AG, Pridana, Volvo Cars, Vestas, Aalborg University Hospital, Beihang University, BUPT, Lund University, Oulu University, UESTC, Chinese Academy of Science

### PUBLICATIONS

#### IMPORTANT PUBLICATIONS

- › [Over-the-air Radiated Testing of Millimeter-Wave Beam-steerable Devices in a Cost-Effective Measurement Setup](#)
- › [Mutual Coupling Reduction for UWB MIMO Antennas with a Wideband Neutralization Line](#)
- › [A Planar Switchable 3-D-Coverage Phased Array Antenna and Its User Effects for 28-GHz Mobile Terminal Applications](#)
- › [A 0.76-pJ/Pulse 0.1-1 Gpps Microwatt IR-UWB CMOS Pulse Generator with Adaptive PSD Control Using A Limited Monocycle Precharge Technique](#)
- › [Room electromagnetics](#)



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### KEY PROJECTS

#### IROTOR

New wireless sensor technology on wind turbine blades will enable design of long, lightweight blades that serve to reduce energy costs.

#### RANGE

An innovative solution to create the necessary systems, hardware and antenna technologies that are applicable to 5th generation mobile terminals.

### VIDEO PRESENTATION



### CONTACT

#### SECTION HEAD

Gert Frølund Pedersen,

Professor

[gfp@es.aau.dk](mailto:gfp@es.aau.dk)

+45 9940 8660

<https://www.es.aau.dk/sections-labs/antennas-propagation-millimetre-wave-systems/>