



**Smartare  
Elektroniksystem**

ELECTRONIC COMPONENTS & SYSTEMS

# Beviljade projekt 2021

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ELECTRONIC COMPONENTS & SYSTEMS

Ett strategiskt innovationsprogram för att öka konkurrenskraft och tillväxt i svensk industri

# Beviljade projekt 2021

## Multifunctional cooling an electrical interposer for RF wireless systems based on Additive Manufacturing

Project budget 6 560 000 kronor, granted funding 3 280 000 kronor

**Partners in project:** Chalmers, Ericsson AB, Saab AB, RISE IVF AB

**Objectives for project:** To develop a multi-functional interposer allowing lateral fluid cooling and high density vertical electrical interconnects for future millimetre-wave communication and sensing infrastructure.

Read more about the project [Vinnova web](#) or [project abstract](#).

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## Sparse linearization and hardware for 5G and beyond

Project budget 6 242 000 kronor, granted funding 3 117 000 kronor

**Partners in project:** Chalmers, Ericsson AB, Bluetest AB

**Objective:** To make large steps in energy-efficient communication for 5G and beyond, through optimization of both transmitter hardware and linearization algorithms. We will achieve this by exploiting the extremely sparse nature of the signals, in time, frequency and space.

Read more about the project at [Vinnova web](#) or [project abstract](#).

## D-band LNA for 5G/6G Xhaul in Nanowire Transistor Technology

Project budget 7 485 000 kronor, granted funding 3 741 000 kronor

**Partners in project:** NordAmps AB, Lund University, Ericsson AB, Cadence Design Systems, Lomma Analog & RF Consulting

**Objectives for project:** Design and evaluation of a low noise amplifier with nanowire transistors for the D-band (130-174.8 GHz) plus further development of a model for circuit simulators.

Read more about the project [Vinnova web](#) or [project abstract](#).

## Low power infrared imaging sensors

Project budget 7 453 000 kronor, granted funding 3 654 000 kronor

**Partners in project:** IRnova AB, KTH, Noxant, Trakka Systems, Saab Dynamics, FOI

**Objective:** The objective is to demonstrate high performance Ga-free T2SL detectors at operating temperatures of at least 130 K, as this will enable production of small, high-resolution imaging sensors with very low power consumption.

Read more about the project at [Vinnova web](#) or [project abstract](#).

# Beviljade projekt 2021

## **ENERGETIC – Energy efficient beamforming antenna-IC integration solutions for future 100+GHz telecommunication systems**

Project budget 7 481 000 kronor, granted funding 3 739 000 kronor

**Partners in project:** Chalmers, Ericsson AB, Gotmic AB

**Objective:** To develop Antenna-Beamforming-IC integration solutions for frequencies above 100GHz that simultaneously overcome the problems of energy consumption of mm-Wave electronics and physical size constraints of intelligent antennas.

Read more about the project [Vinnova web](#) or [project abstract](#).

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## **Roll-to-roll printed bio-based energy storage for integrated smart applications**

Project budget 5 660 000 kronor, granted funding 2 829 000 kronor

**Partners in project:** Ligna Energy AB, Ynvisible Production AB, Epishine AB, Pollux Innovation AB

**Objective:** To design, manufacture and test a unique roll-to-roll printed energy storage cell and to build integrated units, also including solar cell and sensor, and to evaluate these units performance, cost and functionality in relevant environment.

Read more about the project [Vinnova web](#) or [project abstract](#).

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## **Low-cost, high efficiency, wideband circular polarized planar array antenna**

Project budget 8 000 000 kronor, granted funding 4 000 000 kronor

**Partners in project:** Satcube AB, Chalmers, Gapwaves AB, Forsway Scandinavia AB

**Objective:** The objective is to develop a high-efficiency, low power wideband circular polarized planar Ka-band antenna array for the next generation low-cost LEO satellite terminals.

Read more about the project [Vinnova web](#) or [project abstract](#).

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## **Miniaturized LC shutter for backscattering wireless optical communication**

Project budget 2 902 000 kronor, beviljat bidrag 1 451 000 kronor

**Partners in project:** LC-Tec Displays AB, Uppsala Universitet

**Objective:** When the project is finished there will be a fully functioning component for backscattering wireless optical communication with a miniaturized LC-shutter integrated on a retroreflector.

Read more about the project [Vinnova web](#) or [project abstract](#).

# Beviljade projekt 2021

## High current switch

Project budget 1 882 000 kronor, granted funding 941 000 kronor

**Partners in project:** Calix AB, Eskilstuna Elektronikpartner AB

**Objective:** The project's goal is to develop a High Current Switch from the technology concept created in the feasibility study into fully functional prototypes that have been validated for environmental durability in accordance with the automotive industry's requirements. With a technology platform that can switch at least 24V / mounted in a rough environment condition such as an engine compartment of vehicles.

Read more about the project [Vinnova web](#) or [project abstract](#).

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## FRIEND: Full realization of extremely high gain mmW 50dBi+ 70GHz+ Gregorian antenna with a new gapwave feed

Project budget 8 000 000 kronor, granted funding 3 940 000 kronor

**Partners in project:** Ericsson AB, Gapwaves AB, Chalmers

**Objective:** Develop an ultra-high gain millimeter wave (mmW) Gapwave fed reflector antenna with self-tracking function at low cost for 5G mmW backhauling systems.

Read more about the project [Vinnova web](#) or [project abstract](#).

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