Samspill mellom forskning og næringsliv: Hvordan SINTEF arbeider med bedrifter for å øke deres konkurransekraft

Stian Nygaard
Markedsdirektør EU Forskning & Innovasjon
Corporate Innovation Day, 20 Oktober 2016

Scandinavia's largest independent research organization

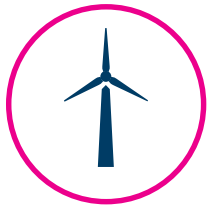
NOK 3,2 billion
Revenues

NOK 500 MILL
International sales

SINTEF

Applied research, technology and innovation

Expertise from ocean space to outer space:



Renewable energy

Ocean space

Industry

Buildings and infrastructure

Materials

Micro-, nano- and biotechnology

Climate and environment

Oil and gas

Health and welfare

Society

ICT

Transport

SINTEF

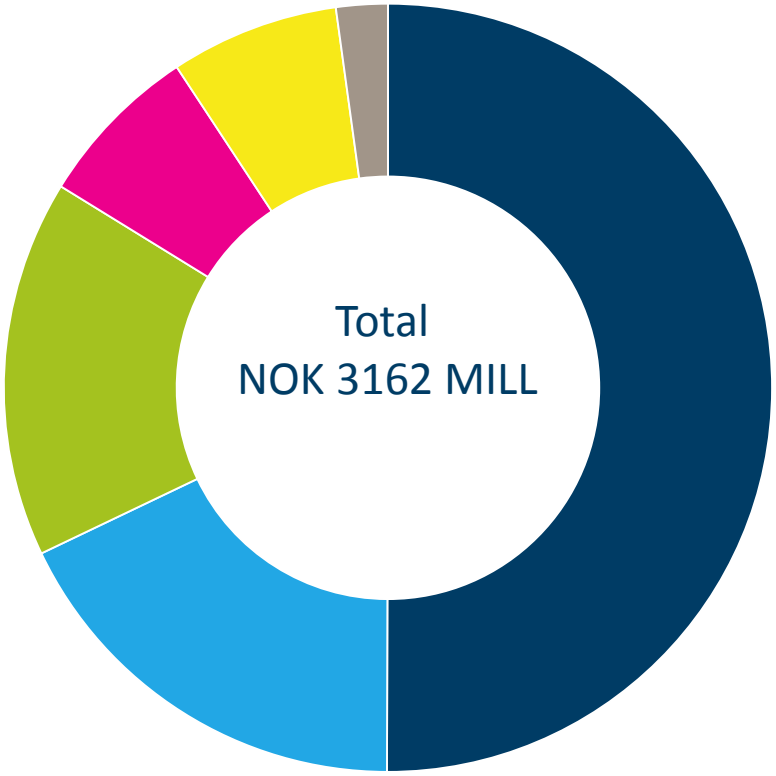
A world-leading research institute

Our main goal: A world-leading research institute.

We develop solutions to some of society's grand challenges by being at the forefront of our strategic focus areas.

SINTEF

More than 90 percent of our income comes from contracts won in open competition



- Business and industry, Norway: 50%
- Project grants from The Research Council of Norway: 18%
- International contracts: 16%
- Basic grants from The Research Council of Norway: 7%
- Public-sector contracts: 7%
- Other sources: 2%

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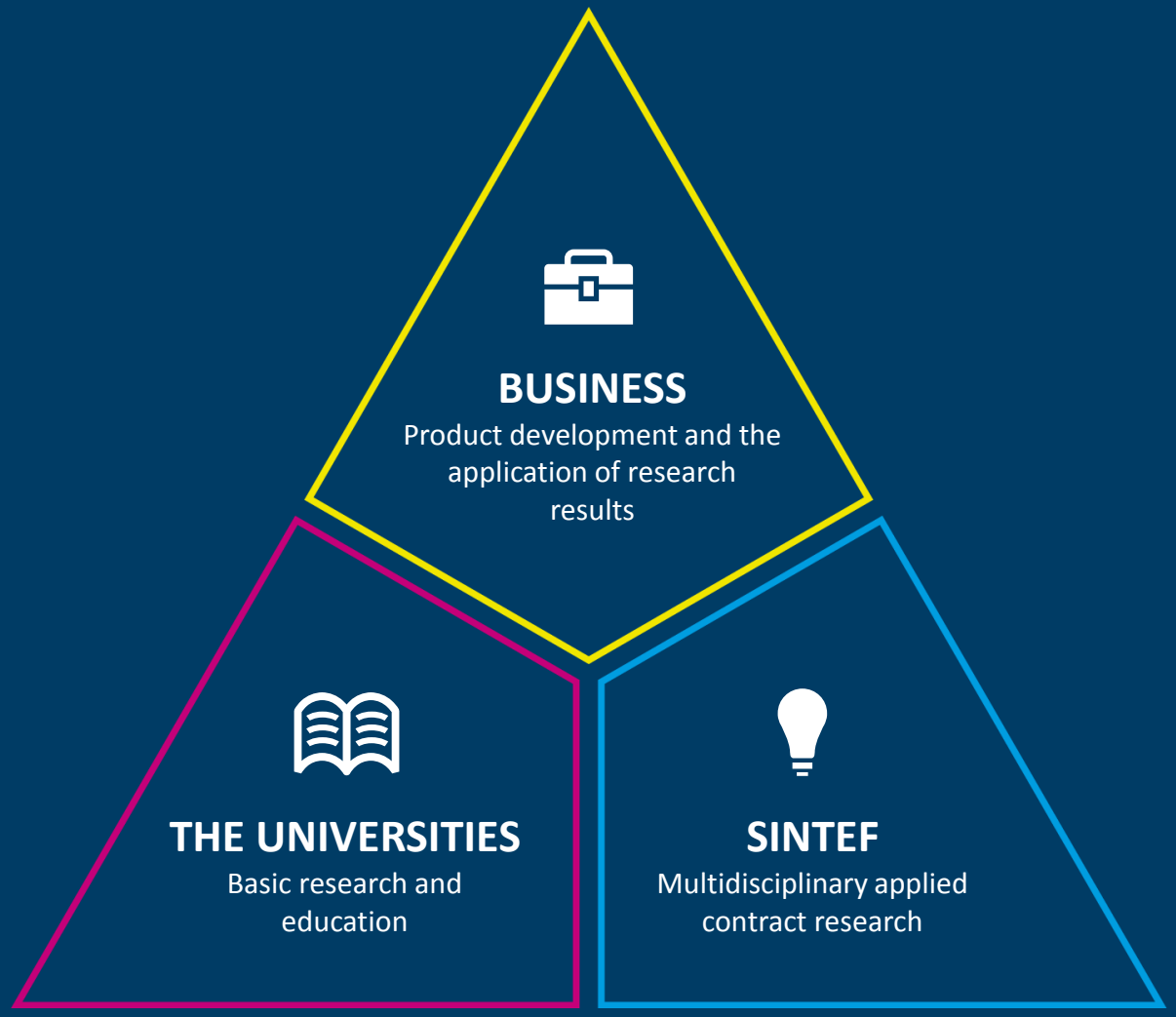
Close working relationships generate innovation and high quality



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Enabling Technologies

Advanced materials

3D-Printing

Micro and nano-electronics - sensors

Big Data

Nanotechnology

Photonics

Virtual/Augmented reality

Industrial biotechnology

Internet of things

Program ware

Robotics and automation

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Enabling Technologies: Optimalization of IPR

- R&D results from Enabling Technologies can often be utilized in several different markets
- Cross-pollination between industries: optimizing the societal impact of R&D

3D-printing

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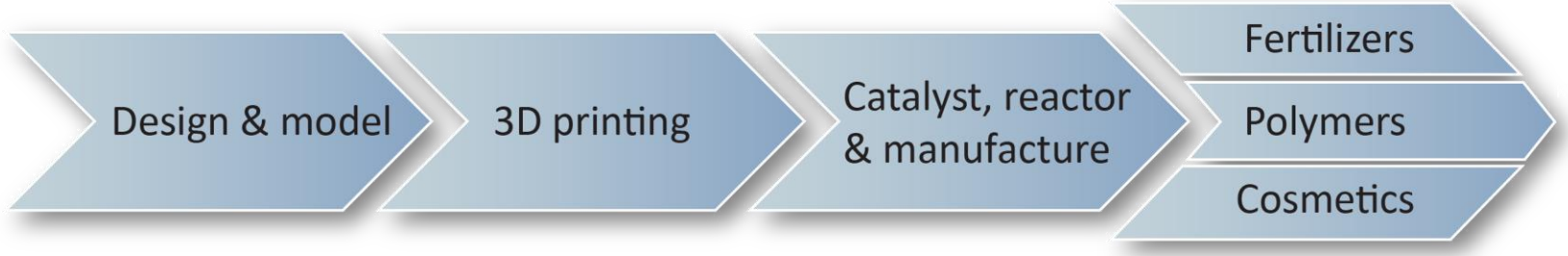
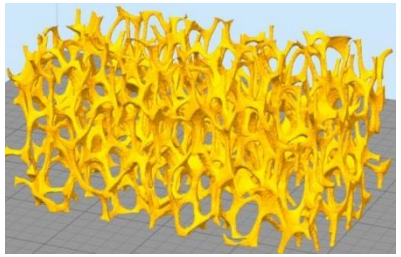
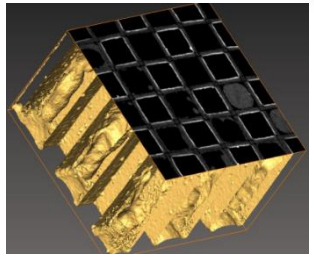
PRINTCR3DIT: 3D-printing in Process Industries

- Implement a methodology to integrate **3D printing** in the **advanced design**, **modelling** and **manufacture** of structured catalysts and catalytic reactors with significant **cost reductions**, access to **new design strategies** and **faster lead times**.
- Increase the efficiency through **process intensification** with targeted goals to significantly **reduce the energy consumption, increased selectivities** and **longer lifetimes**.








PRINT CR3DIT

Coordinator: Carlos Grande
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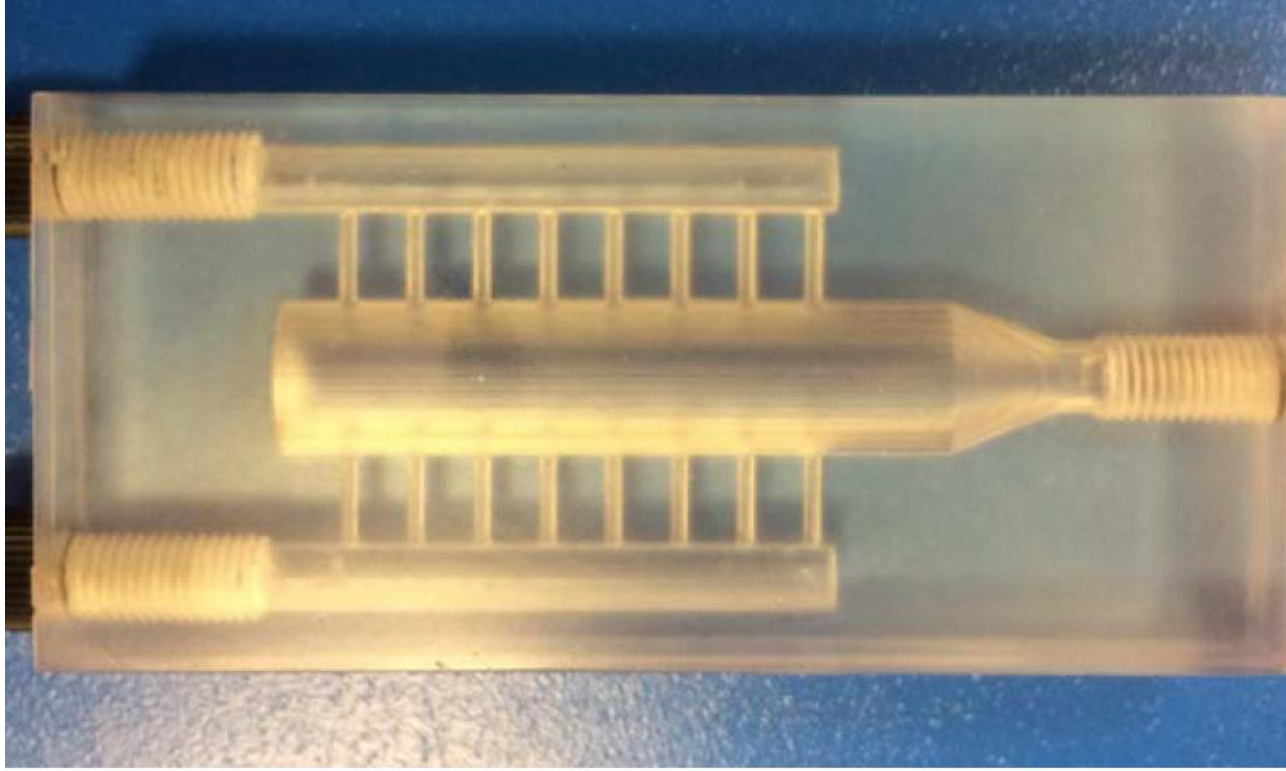
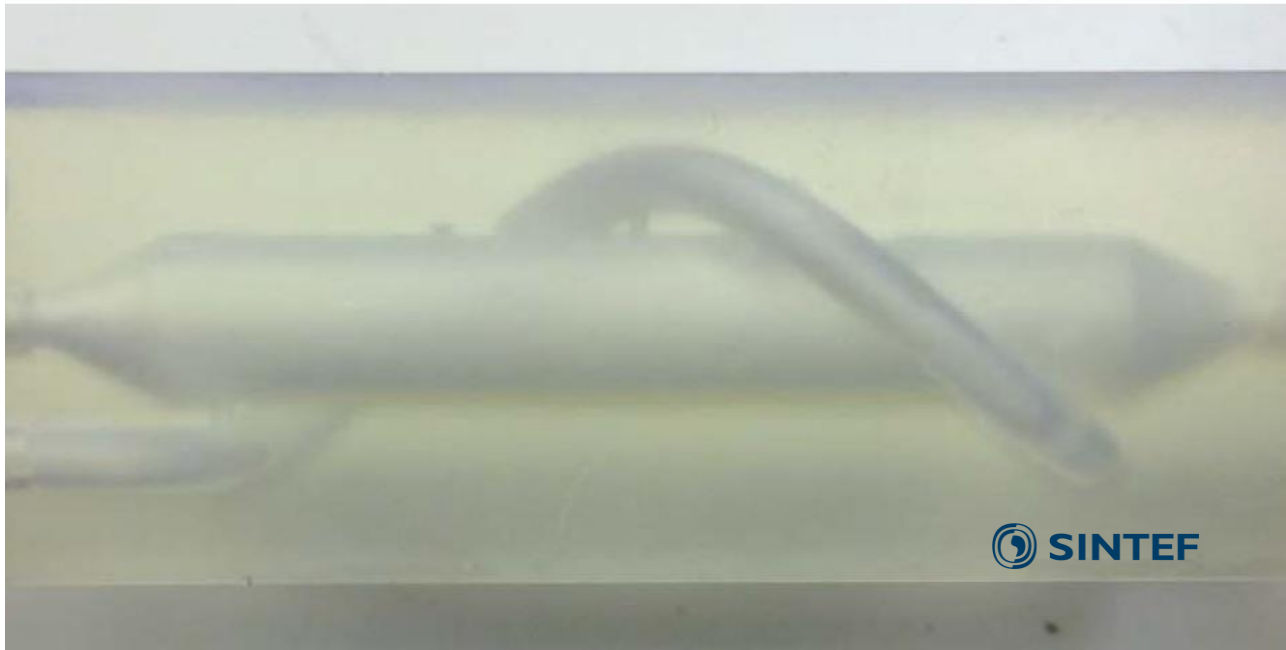
www.printcr3dit.eu

PRINTCR3DIT targets:

- Increased Energy efficiency: 15 %
- Increased catalyst lifetime: 25 %
- Faster production lead time: 30 %
- Reduced reactor volume: 50 %

Examples of reactor prototypes produced by stereolithography that can be produced in metal/ceramic





Potential for market replication:

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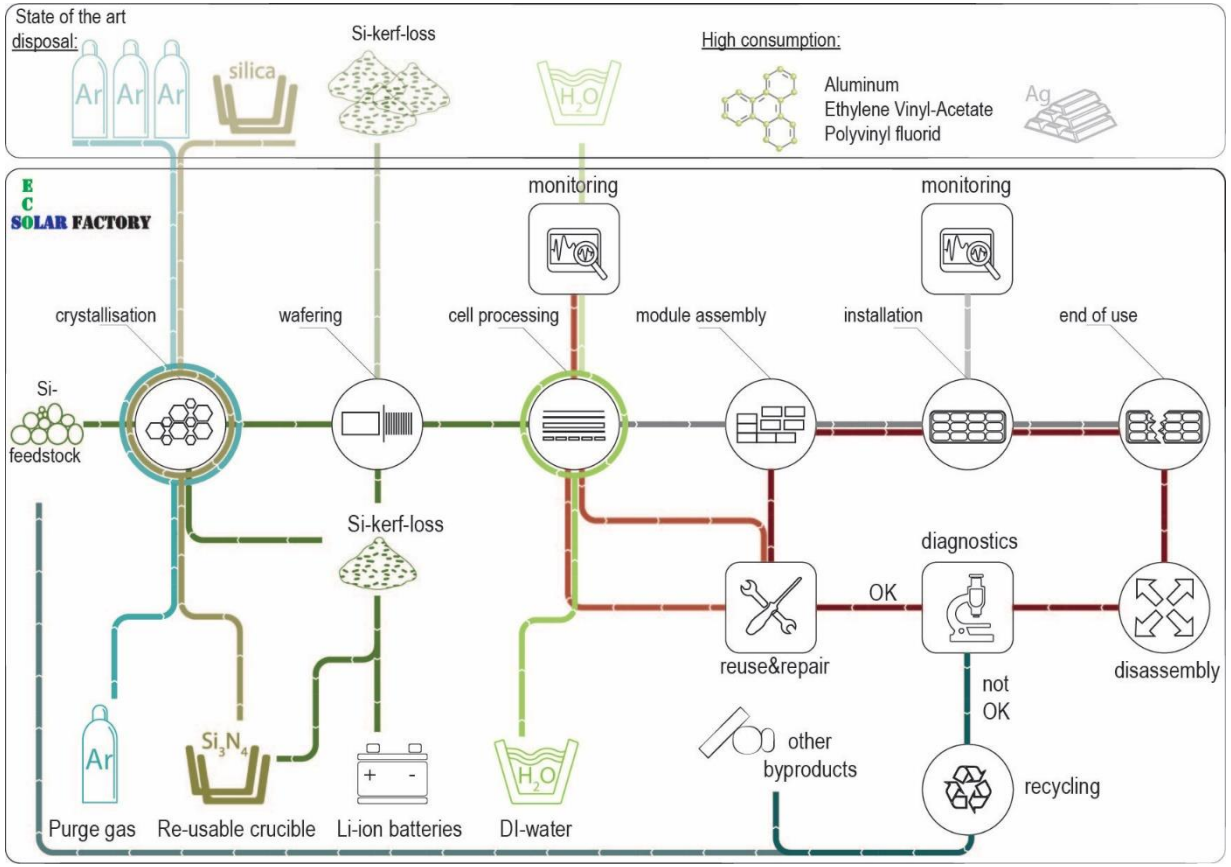
Eco-manufacturing in the PV value chain

40% plus eco-efficiency gains in the photovoltaic value chain with minimised resource and energy consumption by closed loop systems



Eco-Solar Factory envisions an integrated value chain to manufacture and implement solar panels in the most ecologic way by maximising resource efficiency, taking into account reuse of materials during production and repurposing solar panel components at end of life stage.

Targets:

- 30% reduction of waste in the PV-value chain
- 30-40% reduction in energy consumption

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Eco-manufacturing in the PV value chain

40% plus eco-efficiency gains in the photovoltaic value chain with minimised resource and energy consumption by closed loop systems

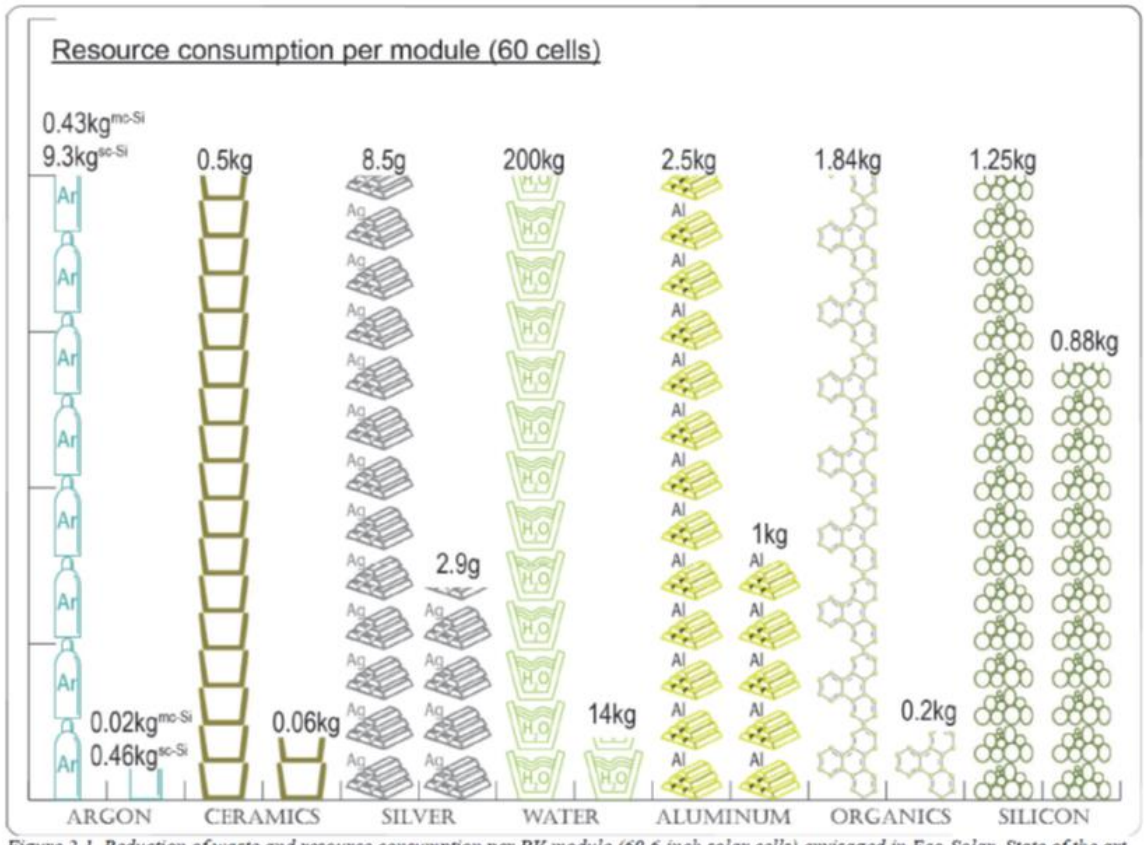

Figure 2.1. Reduction of waste and resource consumption per PV-module (60 6-inch solar cells) envisaged in Eco-Solar. State of the art-data are based on experience values and from[35]

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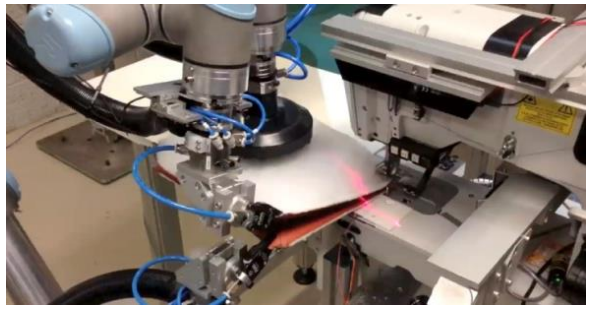
Adaptive sewing process: Integrated, digital, and automated Joining of Fabric for Furniture Industry

- Development of novel adaptive automated joining sewing process in an industrial context. An innovation in technology that can take a typical low cost country industry manual application back to Norway
- Based on the knowledge of welding and other joining processes



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SINTEF

Technology for a better society