



Skandinaviens nordligaste tekniska universitet
Forskning & utbildning i världsklass

Starka forsknings- och innovationsområden vid LTU

SMARTA MASKINER OCH MATERIAL



LULEÅ
TEKNISKA
UNIVERSITET 



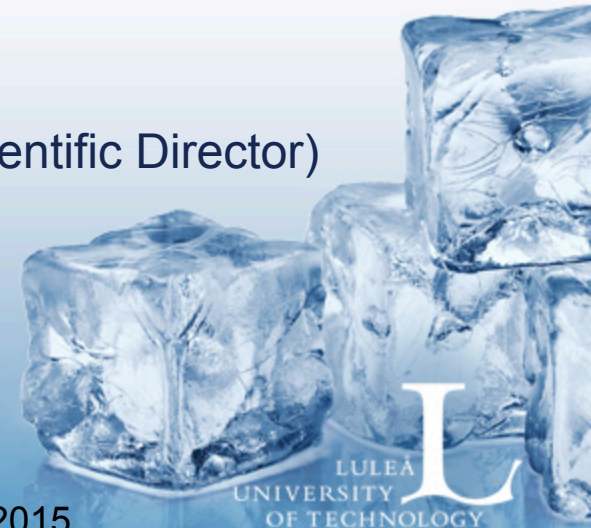
Strong Research and Innovation Area of ...

Smart Machines and Materials (SM²)

*From research to predict and understand
To research to take control*

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Mission

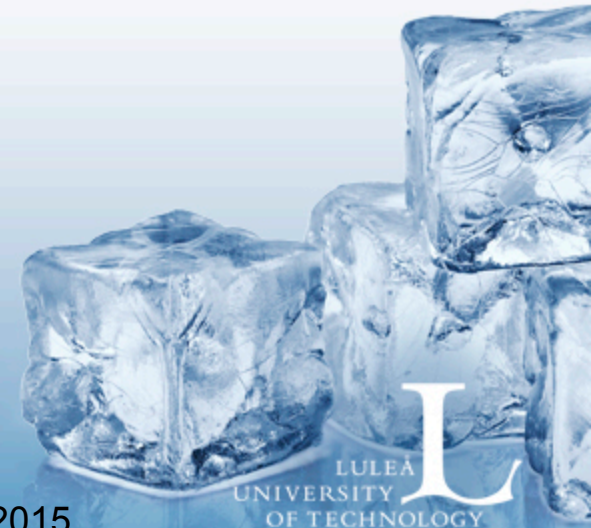
Enabling the development of smarter machines, materials and processes, by establishing new methods, tools, models and multidisciplinary approaches, through research and understanding of physical phenomena.



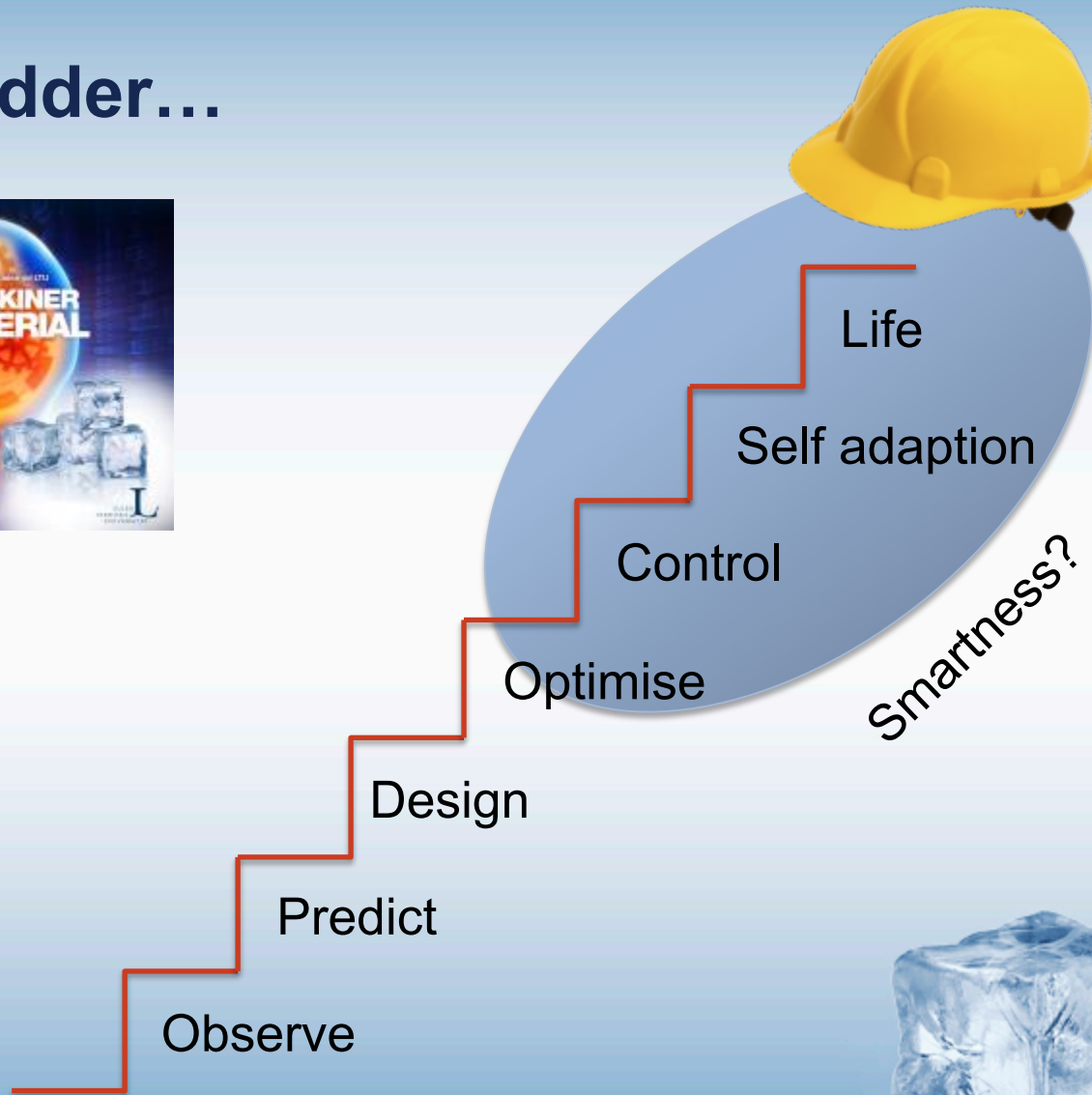


Vision

LTU is a leading university promoting smart machines, materials and processes through multi-disciplinary and multi-scale approaches in mechanical engineering and materials science



Smart-ladder...



First group of University based projects

- **Digital metals** (Alexander Kaplan)
- **Smart sensor for cancer detection** (Kerstin Ramser)
- **Smart nanocomposites** (Nazanin Emami)
- **Smart greases** (Lars-Göran Westerberg)

For young researcher, senior researcher and two post-docs



We need to narrow our focus

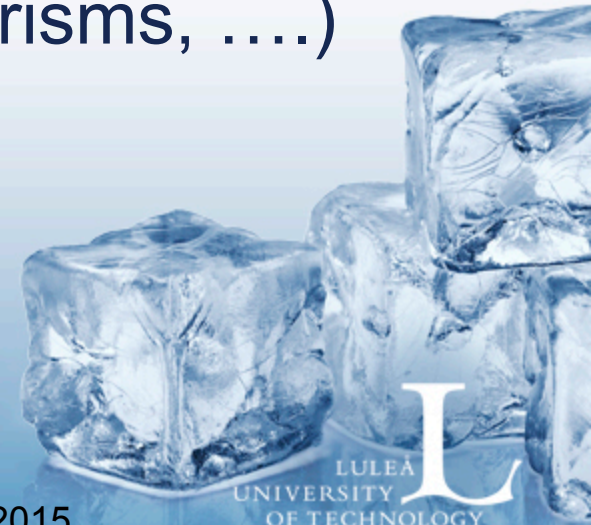
Smart machines and materials has a very wide scope and it is important that we form some guidelines and narrow it down into one or a few slots where we are or can reach the front of research.

It may be that we also form a couple of locally or/and industrially based platforms where the short time goal is to work with local or global industry and later on become world leading in research. These may be based on existing centres at LTU



The sharpening will be based on

- Infrastructure at LTU
- Highly ranked research at LTU
- Local industry (Computer centres, paper making, composites manufacturing, metals processing, mining,)
- Local conditions (Ice and snow, tourisms,)
- Research network world-wide
- Industrial network world-wide
- International trends





Industrial platforms

- Centre for High performance Steel
- Composite Center Sweden
- Faste Laboratory
- SKF University Technology Centre
- WoodCenter North





Laboratories

- Complab
- Fundamental material characterisation laboratory
- John Field Laboratory
- Laser processing laboratory
- Simulation and computational laboratory
- Tribolab
- X-Ray laboratory

