

# OPEN SCIENCE

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**A NEW PLATFORM FOR APPROACHING SCIENCE, NUCLEATE  
IDEAS, AND MEET COLLABORATORS**

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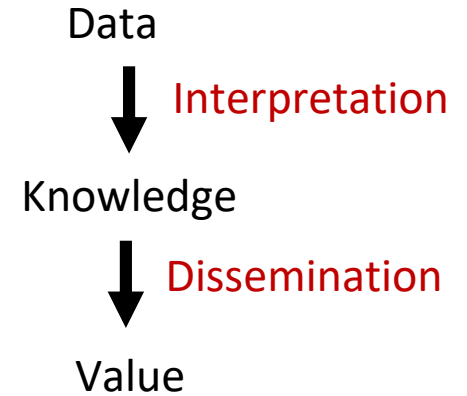
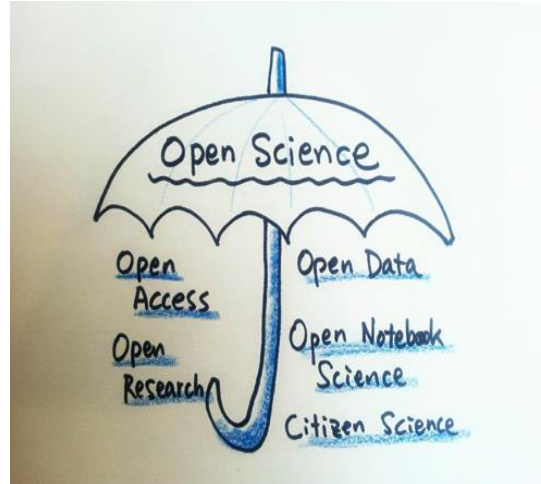
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# WHAT IS OPEN SCIENCE?

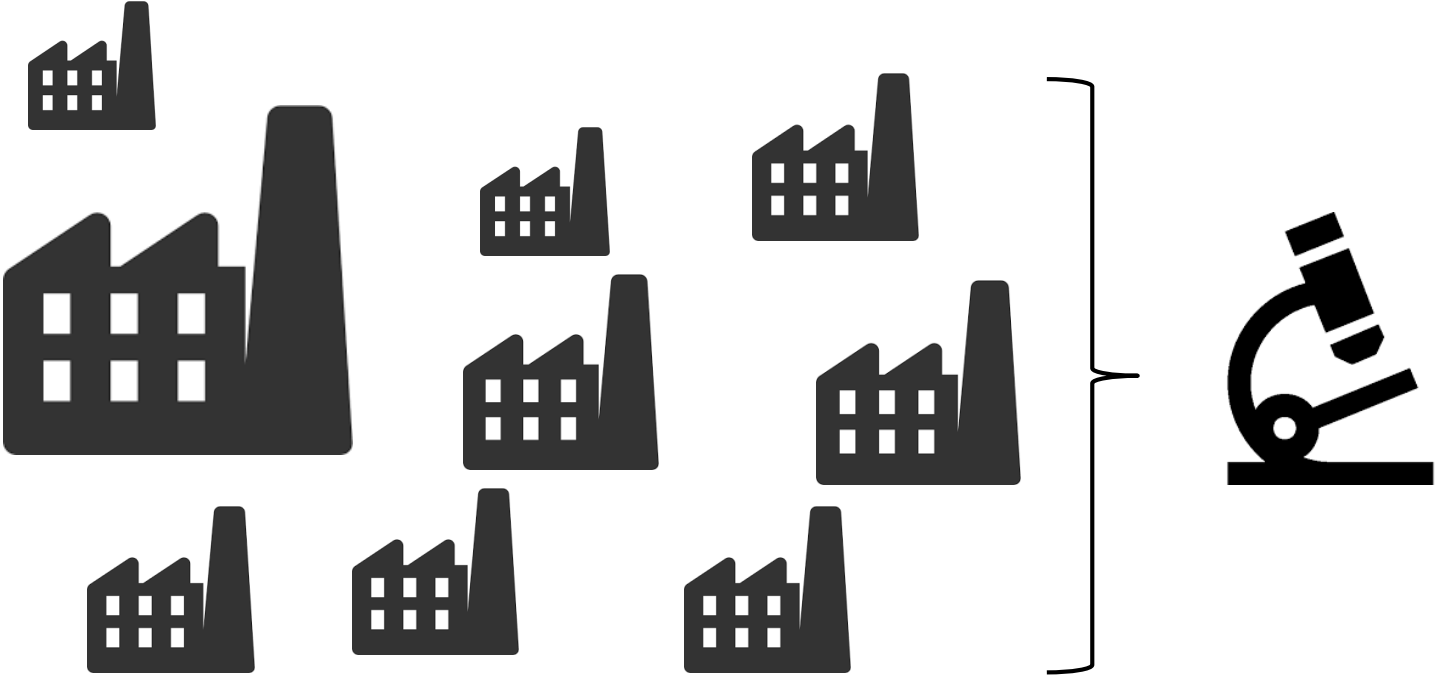


# RESEARCH POLICY TRENDS IN DK

- 
- Less funding for fundamental research
  - Favors applied, "low risk/medium yield" projects
  - Are we inadvertently starving out a source of radical innovation?
  - A factory of small ideas and small minds?

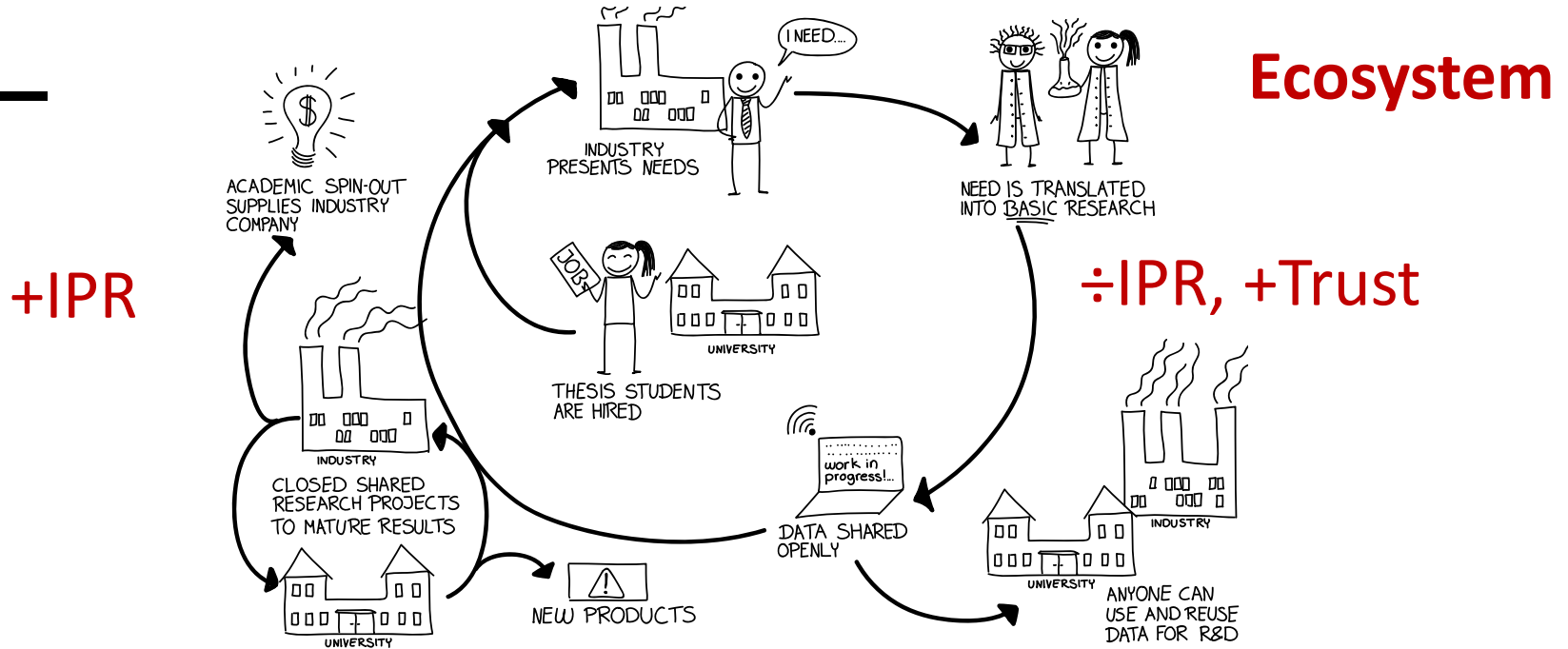


# CURRENT SITUATION



**Less and less  
fundamental  
research**

# THE OPEN SCIENCE MODEL



# OPEN SCIENCE AT INANO

- 
- Pilot project on smart polymers and nanocomposites (**SPOMAN**; december 2016; no IPR)
  - Original members: **iNANO, Alfa Laval, SP Group, Ecco, Newtec, Lego, Velux, Radisurf, Vestas**
  - Now 20 companies, 2 investors, 5 Danish universities, and 5–7 foreign universities (200 members in total)
  - 9 projects, 20 students
  - Monthly meetings and project meetings



# OPEN SCIENCE WEBSITE



Home News Researchers ▾ Industry Students ▾ OS Festival ▾ Projects ▾ OS meetings Contact OSF 🔍

## Project 2: Graphene composites

Explore how the nature of the coating/composite matrix influence the ability of Graphene exfoliation. Graphene suspension and matrix mix; dried to create powder coating with graphene.

### Methods:

Suggested matrix: PFA (Hydrophobic fluoropolymer) and PA (Hydrophilic) as powders (<50µm).

The powder is added to a chose graphene suspension under high shear until a homogeneous pasta is obtained. The solvents are removed and the product is made in to a powder. A film is made from the powder coating and electric conductivity/resistance is measured and used as indication on homogeneity of the composite. The hydrophobic and hydrophilic systems are compared.

Involved partnes: Aarhus University ([Mogens Hinge](#), [Steen U. Pedersen](#)), Copenhagen University ([Kasper Nørgaard](#)), [ECCO](#), [RadiSurf](#), [Vestas](#), [SP Group](#)

Data, progress, and status on the project is found [here](#).

If you're interested in hearing more about this project, SPOMAN or want to hear about the possibilities for starting a collaboration, please contact us at [stinekinano@inano.au.dk](mailto:stinekinano@inano.au.dk).

# BEYOND THE OPEN DATA BASES

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# CASE 1: UNIVERSITY – INDUSTRY

## Fluoropolymer Coating



- Chemically inert
  - Non-stick
  - Low friction
  - Weather proof/UV resistant
  - Non-toxic
  - Inflammable
  - **Low/none electric conductivity**
- Chemically inert
  - Non-stick
  - Low friction
  - Weather proof/UV resistant
  - Non-toxic
  - Inflammable
  - **Antistatic**



Kasper Nørgaard - KU



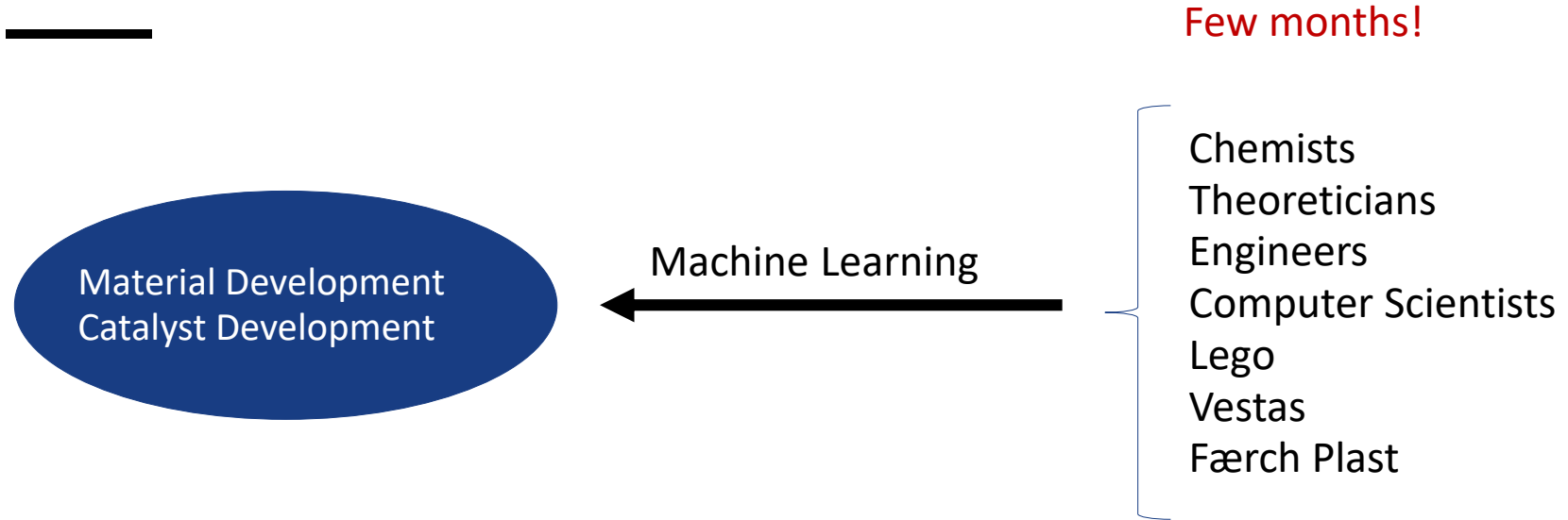
+ 0.1% graphene



Research proposal

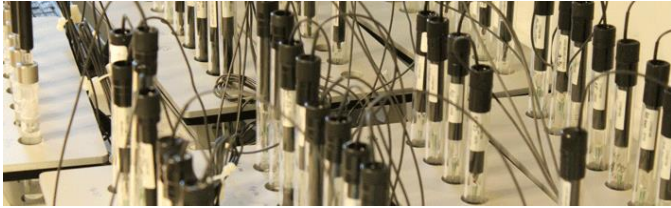
Accostat: SP Group product since 2017

# CASE 2: SETTING UP NEW RESEARCH



# CASE 3: INDUSTRY – INDUSTRY

## Sensors



## Adhesion technology



Launch of new product in March 2018



# CASE 4: ACROSS DISCIPLINES

Medieval researchers from SDU in the field of palimpsest



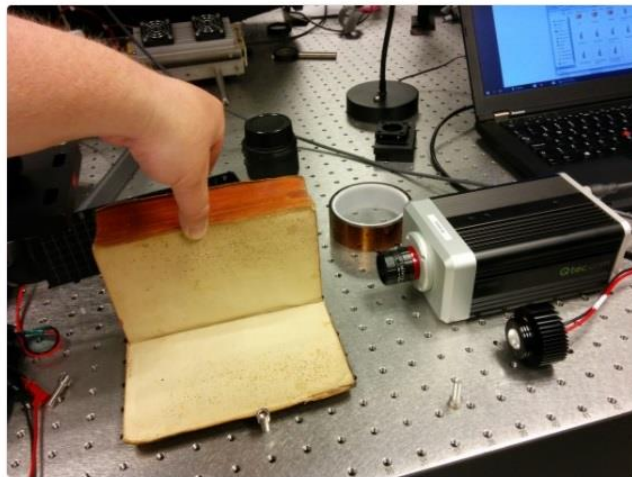
**NEWTEC** Hyperspectral camera technology

**iNANO** Data analysis tools

 **Steffen Hope**  
@HopeSteffen

Følg

Today I had my first trip to a lab for hyper spectral scanning of old books with my colleague [@JakobPovl](#). Immensely exciting experience.



Retweets  
**17**

Likes  
**56**



09.09 - 20. jun. 2017 fra [Danmark](#)

6

17

56



Revealing hidden medieval texts with hyperspectral imaging

Søren Stærke on LinkedIn

May 29, 2017

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# STUDENTS

## New skills and experiences on an Open Science Platform

- Try out life as a researcher in a company
- Learn to translate an industrial need to a general fundamental research question: Think out of the box!
- Work on an open platform and set up, e.g., web-based scientific challenges
- Improve presentation techniques and communication skills at monthly open science meetings
- Learn about project management
- Learn about entrepreneurship
- Enjoy teamwork involving people from different disciplines
- Create partnerships and extend the personal network
- "Risk" of getting headhunted directly by the industry, if one shows too much engagement!



# THE MANY CHALLENGES

- 
- Explosive growth the first year – how to build up an organisation to handle it
  - Structuring a "fluid" movement
  - Collective responsibility = no responsibility (how to avoid!)
  - How to avoid an overflow of data/information
  - Recruiting enough students
  - Create proof and concept for almost no funds: work with what you've got at hand





# PILOTING IN A NUTSHELL

Expectations



Reality



boredpanda.com



# POLITICAL IMPLICATIONS

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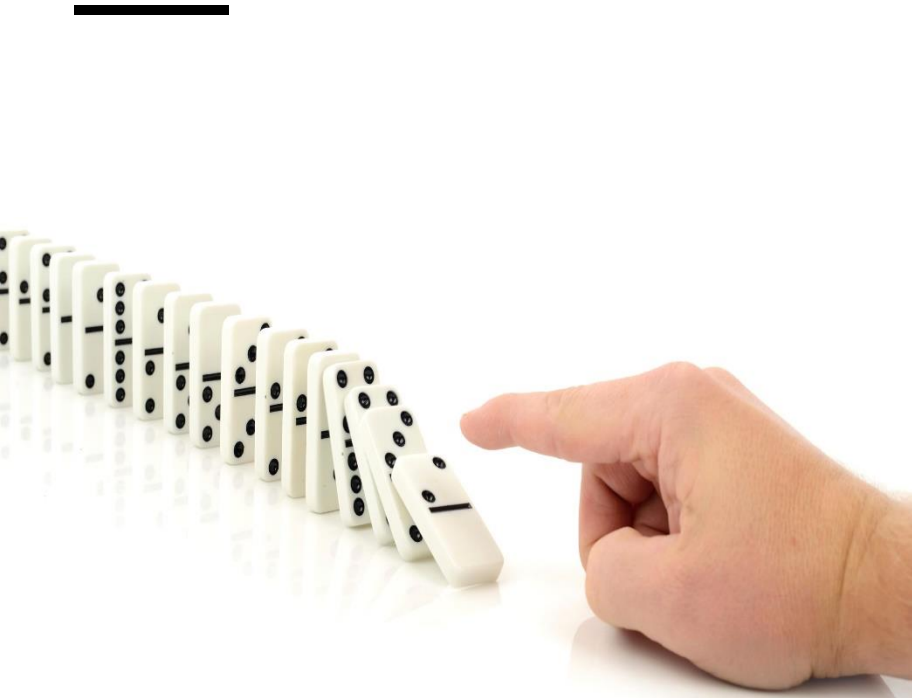
SHOULD WE SUCCEED, IT WILL BRING ABOUT CHANGES...

- The university act
- Fundamental vs applied research funding
- Incitement structures
- Journal business models



**Please join, contribute, and build together with us!**

# EVALUATING IMPACT



- *New Knowledge Center for Open Science* evaluates impact on e.g.:
  - Research quality, incentive structures
  - Industrial innovations and investments in fundamental research
- Should we copy/paste the experiment?

# THANK YOU!



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Read more:

[www.spoman-os.org](http://www.spoman-os.org)

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## Management



Iben



Jacob



Marie Louise



Stine



Kim

**You should be most welcome to join, contribute, and build together with us!**