



# Materials Commons: knowledge sharing across the materials ecosystem

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# Political priorities



## European Green Deal

- The first climate-neutral continent by 2050
- At least 55% less net greenhouse gas emissions by 2030, compared to 1990 levels
- 3 billion additional trees to be planted in the EU by 2030



## A Europe Fit for the Digital Age

- €250 billion boost to digitalisation from Next Generation EU
- 80% of EU population should have basic digital skills by 2030
- €43 billion of policy-driven investment will support the Chips Act until 2030

# Circular regenerative economy



“The European Green Deal is our new growth strategy. The novelty and the difference to our fossil fuel based model is that we will foster growth that is **not extracting resources but that gives back more to the planet** than it takes away.

This is what economists call the **regenerative growth model.**”

# Advanced materials are the engine of innovation

Nobel prizes in physics, 2010



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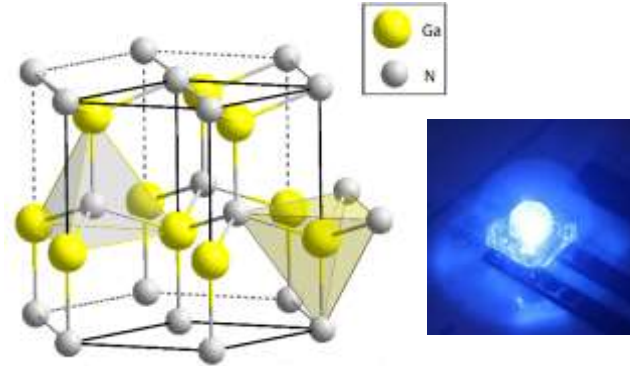
Andre Geim

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Konstantin Novoselov



Nobel prizes in physics, 2014



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Isamu Akasaki



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Hiroshi Amano



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Shuji Nakamura

Nobel prizes in chemistry, 2019



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John B. Goodenough

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M. Stanley Whittingham

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Akira Yoshino



# European competitive edge in advanced materials is undermined by global competitors



Source: ATI report

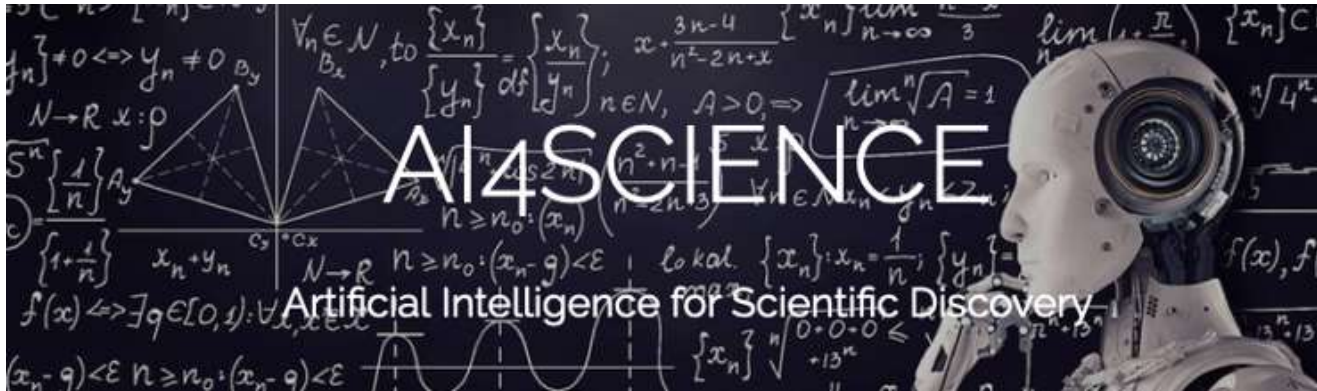


## Vision

*A strong European Materials ecosystem to drive the green and digital transition alongside a sustainable inclusive European society through systemic collaboration between upstream developers, downstream users, and citizens and all stakeholders in between.*



# Digitalisation and data can drastically accelerate innovation



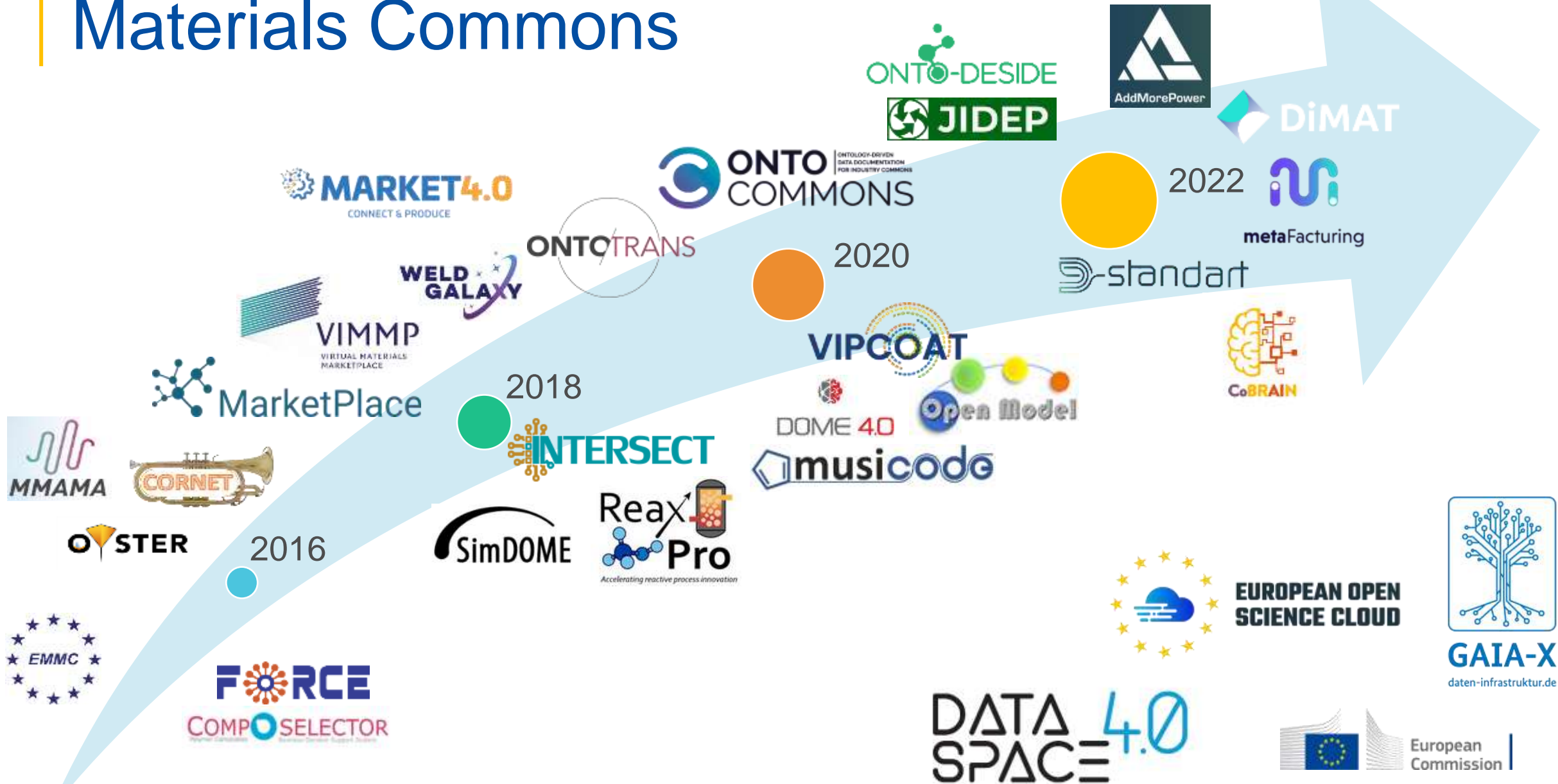
*"Few fields are untouched by the machine-learning revolution, from materials science to drug exploration; quantum physics to medicine."*  
[Nature Editorial \(2019\)](#)



**MATERIALDIGITAL**

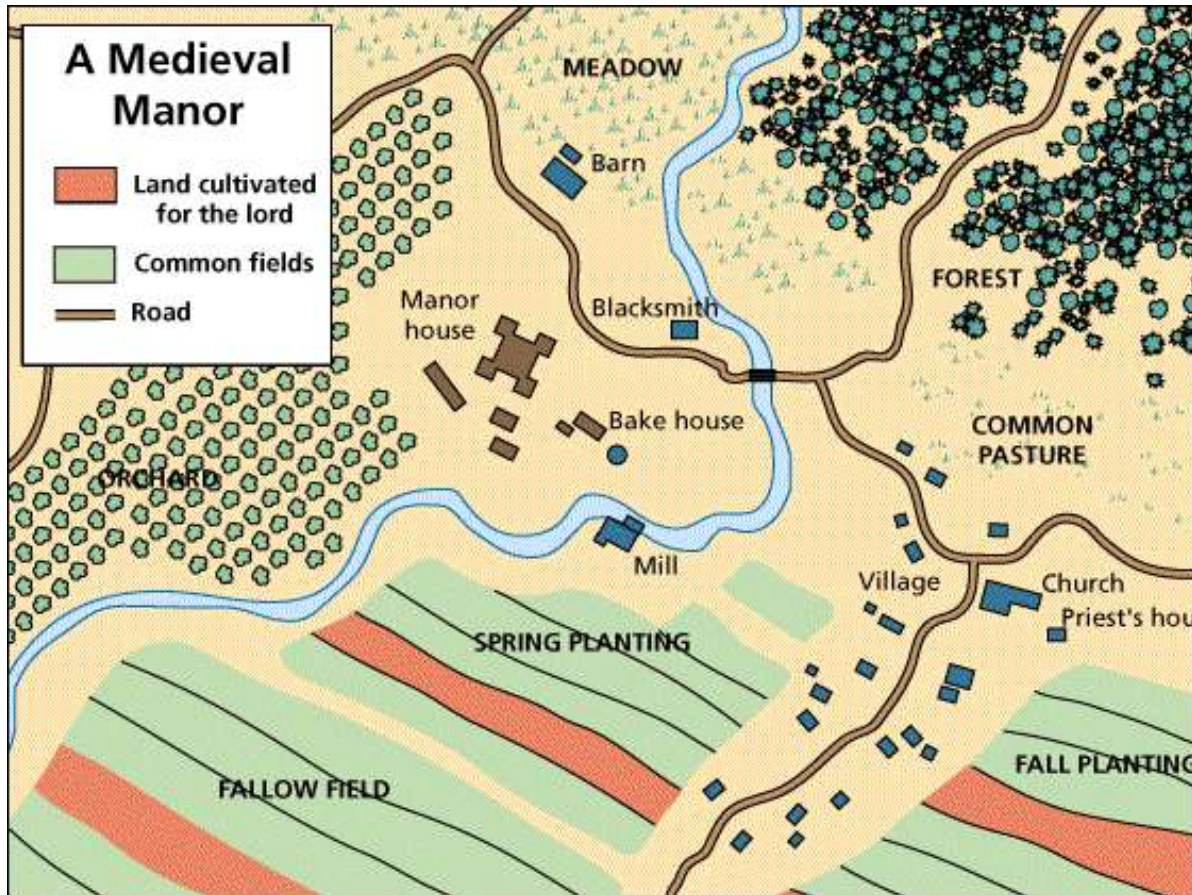


# From materials data to Materials Commons





# Commons – a bit of history



**The Common** – is land owned collectively by a number of people and they use the land for their livestock to graze, to collect firewood, and to cut turf for fuel. Those who own part of a common were called commoners, which is the origin of the term.



# What is then a Materials Commons?

- A digital place where all available data related to materials are accessible, from modeling to characterization to operational use
- A trusted system for all stakeholders, including industry
- Data ownership is respected
- Users' activity is recorded
- Boundary conditions: inclusiveness, transparency, accountability, FAIR

# The Materials Commons need co-creation

Engage and contribute to identify:

- Scope and content of Materials Commons
- Gaps and needs for an efficient Materials Commons
- Rules and safeguards to create a trusted environment
- Governance structure and implementation issues