



19th EuroSciCon Conference  
on Nanotechnology and Smart Materials

“Nanotechnology based solutions  
for enhanced products and processes  
in existing industrial manufacturing plants”  
Workshop

Chair:  
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# Nanotechnology for the EU progress

## Nanotechnology as a Key Enabling Technology

Key Enabling Technologies (KETs) are a group of six technologies:

- micro and nanoelectronics,
- **nanotechnology**,
- industrial biotechnology,
- **advanced materials**,
- photonics, and
- **advanced manufacturing technologies**.



They have applications in multiple industries and help tackle societal challenges. Countries and regions that fully exploit KETs will be at the forefront of creating advanced and sustainable economies.

# The problem

## KET's and the European “Valley of Death”

Europe is a global leader in the development KETs.

However, the European record in translating this knowledge advantage into marketable products and services doesn't match this. KETs-related manufacturing is decreasing in the EU and patents are increasingly being exploited outside the EU.

One of Europe's major weaknesses with KETs is its **difficulty converting knowledge into marketable KETs-based products and services.**

This **innovation gap** has been identified as the **European 'Valley of Death'**.



# The strategy

## European strategy for KETs

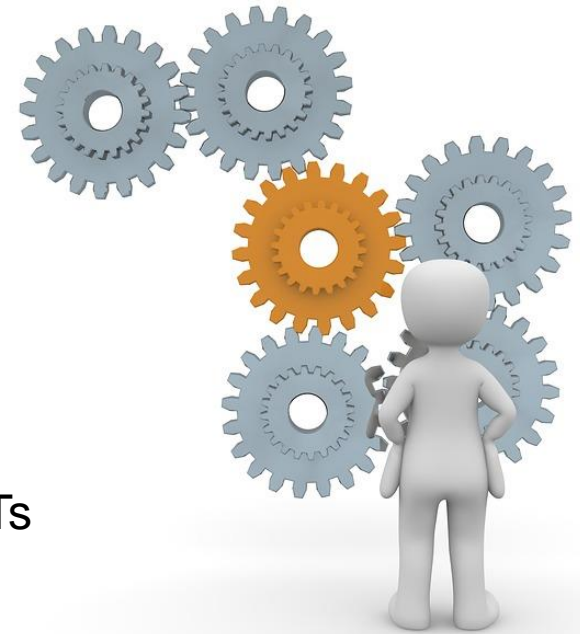
Creating the right investment conditions and economic environment for the KETs industry to develop its manufacturing capacities in Europe

Reinforcing the KETs innovation capacity of SMEs

**Helping industry develop innovative products that integrate different technologies**

Addressing the skills requirements for KETs

Ensuring a level playing field for KETs

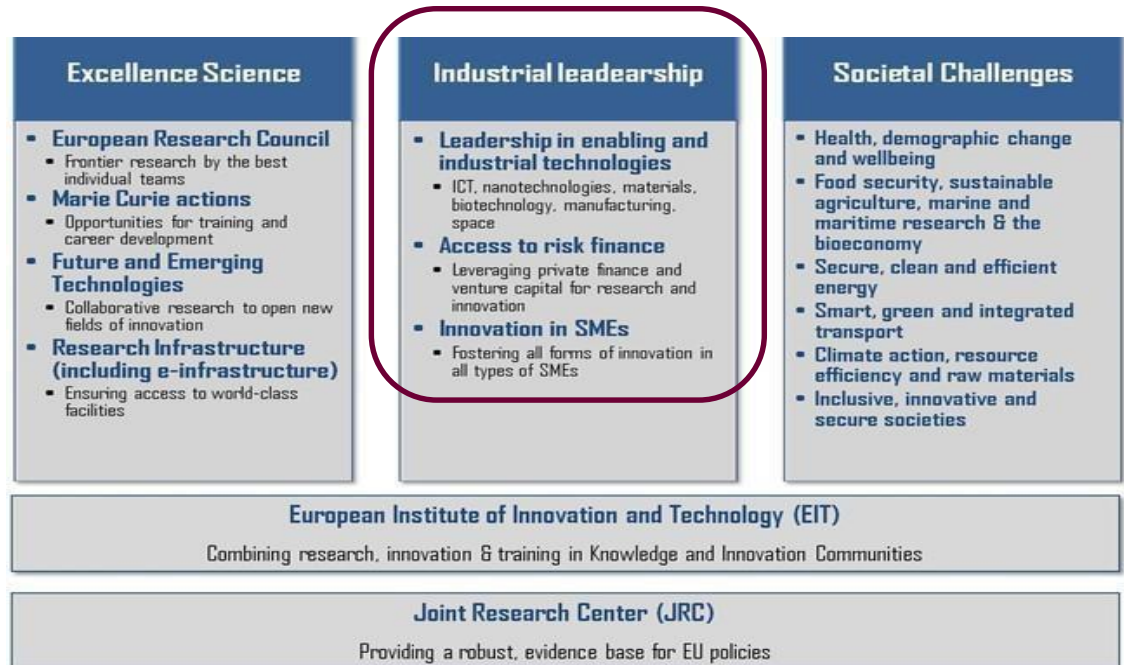


# The role of Horizon 2020 Programme

## Horizon 2020

Horizon 2020 is the biggest EU Research and Innovation programme ever.

Seen as a means to drive economic growth and create jobs by coupling research and innovation, it is aimed at ensure Europe produces **world-class science**, removes barriers to **innovation** and makes it easier for the **public and private sectors** to work **together** in delivering innovation.



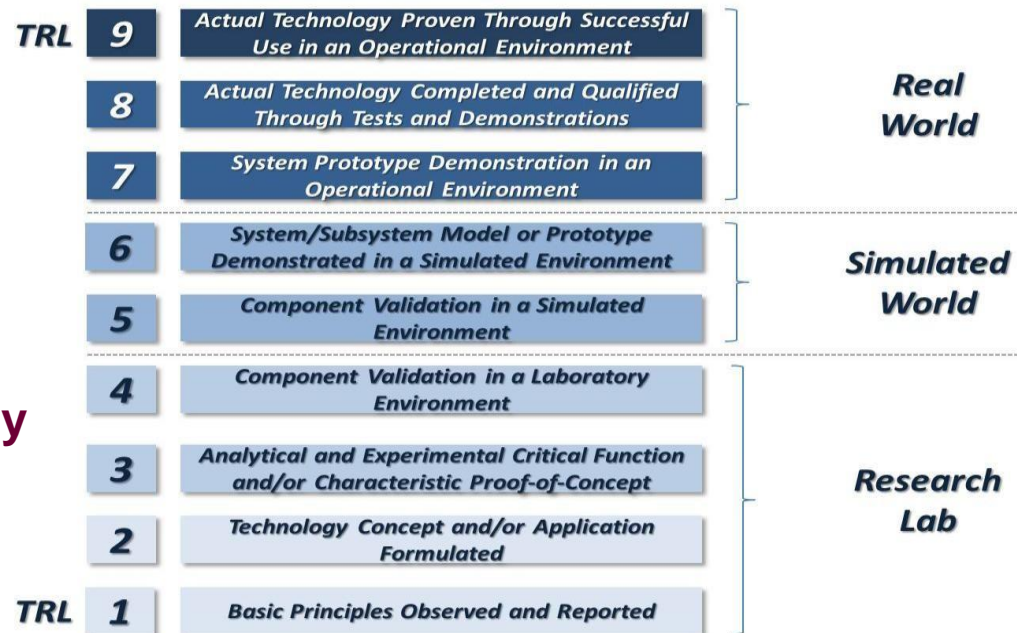
# The role of Horizon 2020 Programme

## Leadership in Enabling and Industrial Technologies (LEIT)

This part of H2020 programme covers different areas:

- **Nanotechnologies**
- **Advanced materials**
- **Advanced manufacturing and processing**
- **Biotechnology**

Activities address the whole innovation chain with **Technology Readiness Levels** (TRLs) spanning the crucial range from medium levels to high levels preceding mass production.





# The contribution of IZADI-NANO2INDUSTRY Project to overcome the European Innovation Gap

## IZADI-NANO2INDUSTRY Project and KETs

Funded under the LEIT pillar of H2020 programme, IZADI-NANO2INDUSTRY proposes different **solutions based on KETs** (such as nanotechnology, advanced materials and manufacturing) **to contribute to overcome the barriers that nano-materials are facing to get introduced in the market.**

Nanotechnologies/ Advanced Materials	Advanced processes	TRL
Nano-reinforced thermoplastics	Nanotextured mould inserts	TRL7 – ESTCRATCH pilot line
Nano-reinforced metal castings	Gravity casting process for nanoreinforced metal parts	TRL7 – HARDCAST pilot line
Nano-structured coatings	Thermal spray technology	TRL7 – TRIBONANO pilot line

