The Austrian RTD-Policy in Nanotechnology

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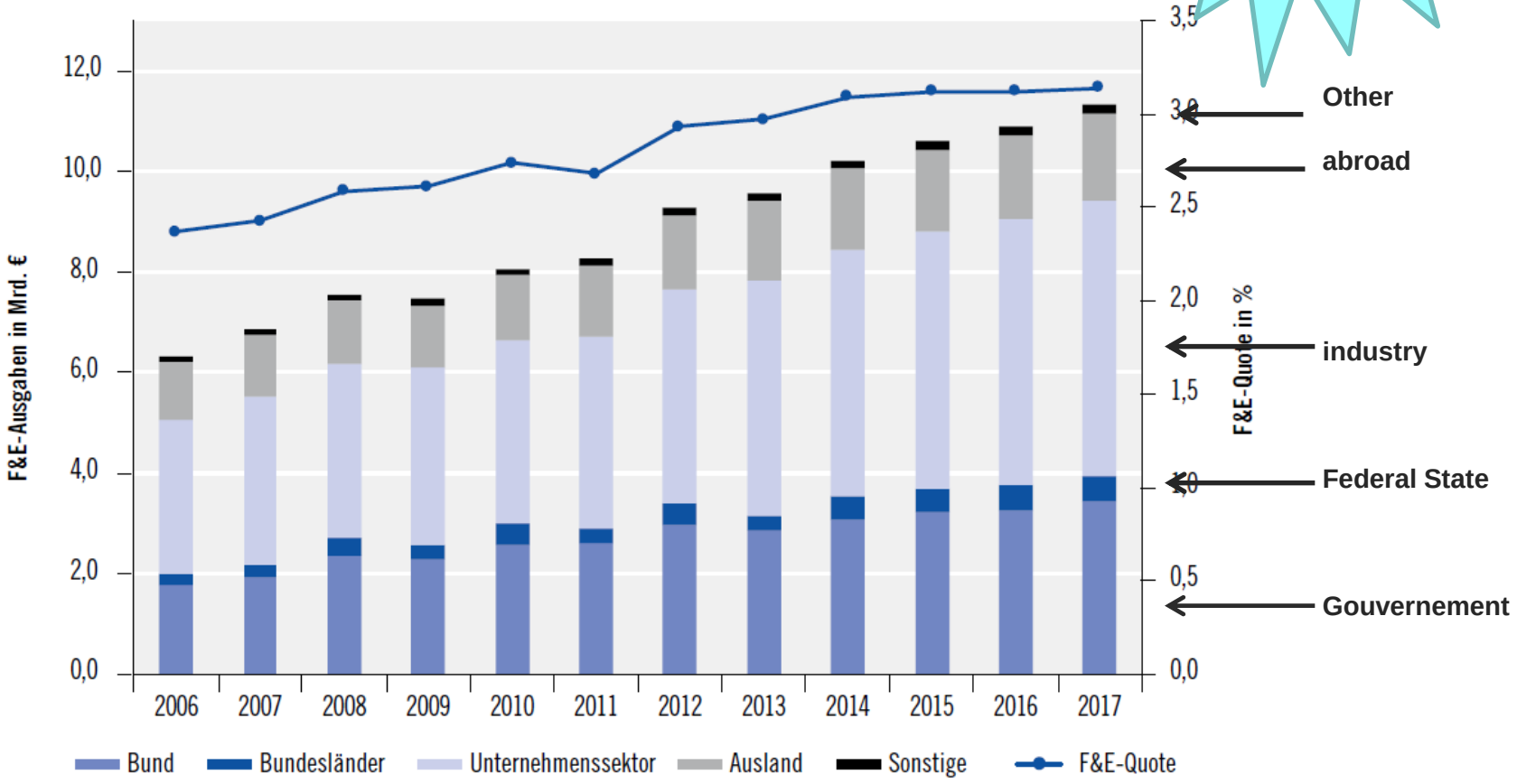
bmvit

Austrian R&D-Performance

Goal defined by the Austrian government: 3,76 % in 2020

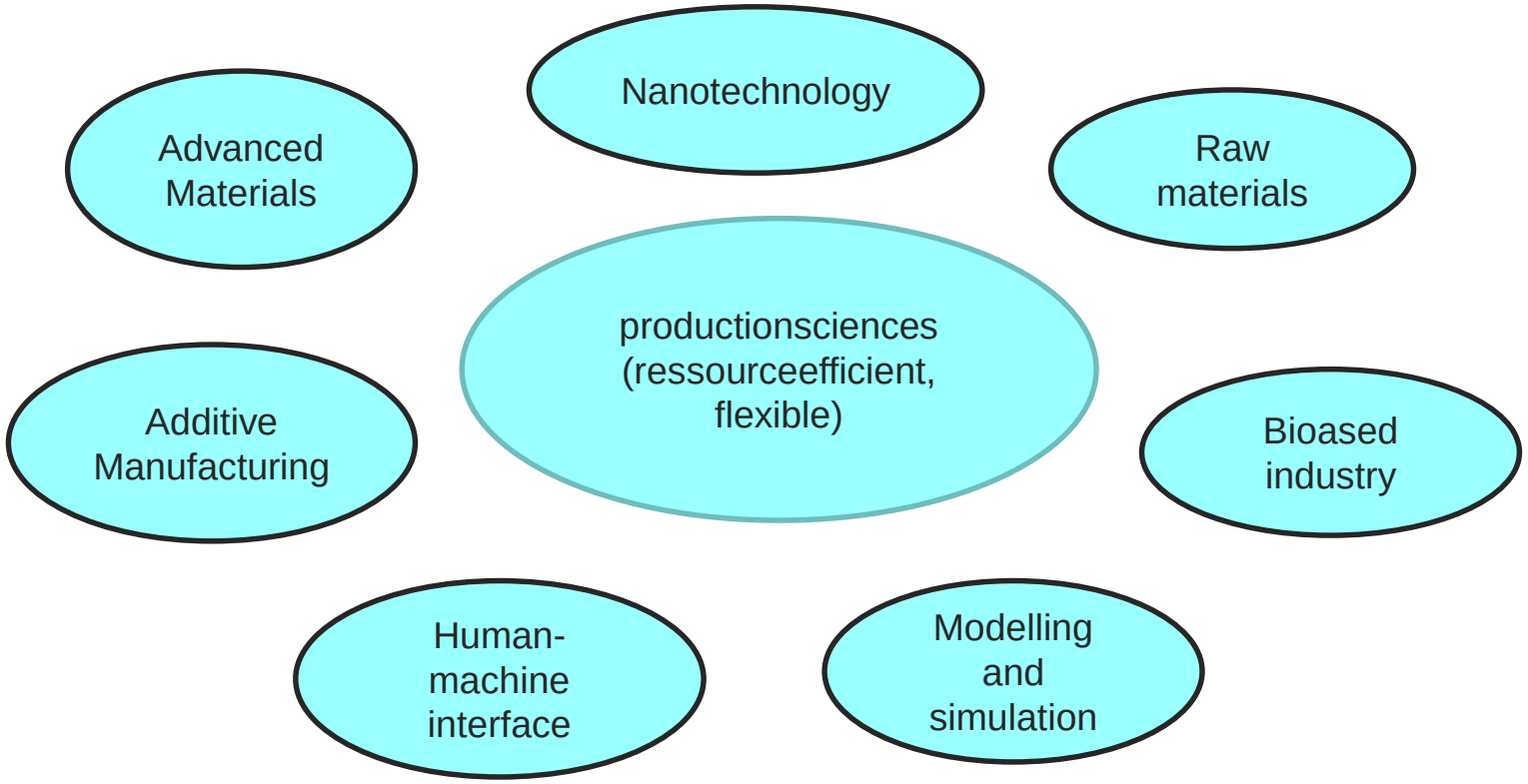


Fields of application and knowledge in Nanotech-research in Austria

No potential
Low potential
High potential
Very high potential

	Nanophotonic	nanoelectronic	Nanodevices and sensors	Nanobio and nanomedicine	Design and fabrication of nanostructures	Characterisation of nanomaterials
Energy						
Resource-efficiency						
environment						
medicine						
food						
building						
mobility						
ICT and security						
Machine and tools						
Analytical and enabling tools						

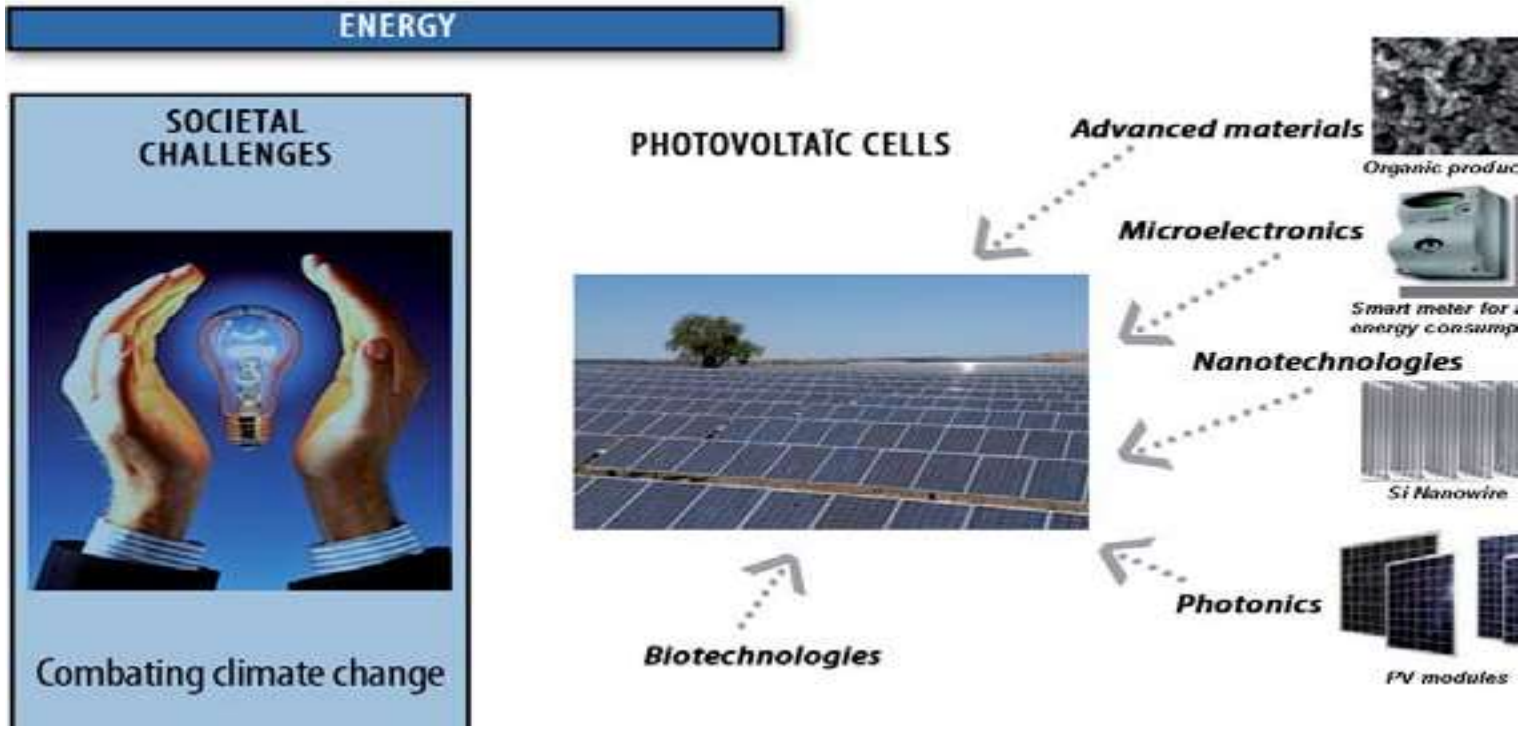
R&D-Initiative „Production of the future“: the Autrian Flagship Programm in Key Enabling Technologies and Industry 4.0



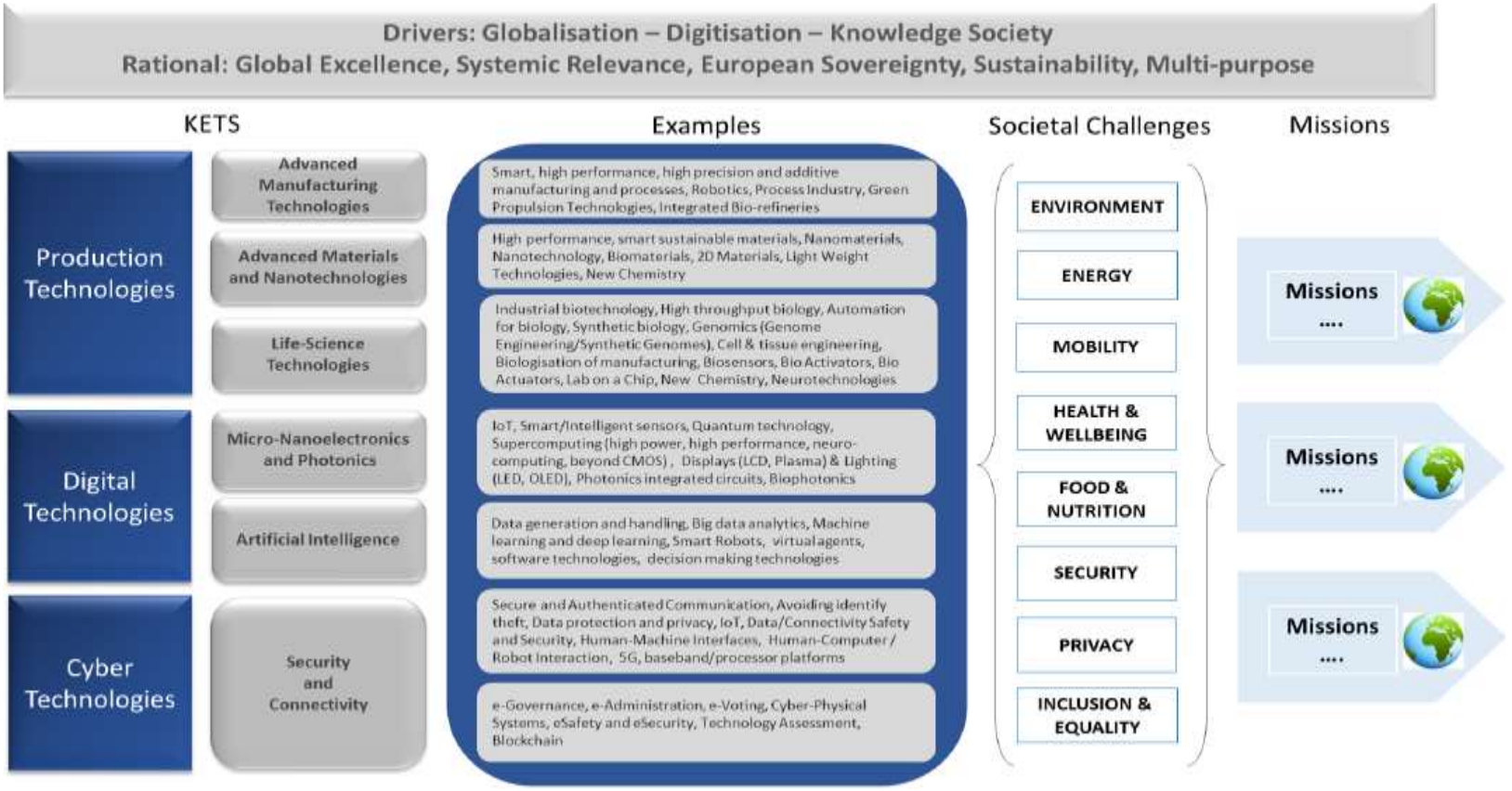
What are key enabling technologies…?

- six strategic technologies of high economical importance and high potential to solve social challenges
  - nanotechnology
  - Advanced materials
  - Micro- and nanoelectronics
  - photonics
  - Industrial biotechnology
  - Production research
- high R&D-intensity, fast innovation cycle
- multidisciplinary
- Needs high-qualified work forces

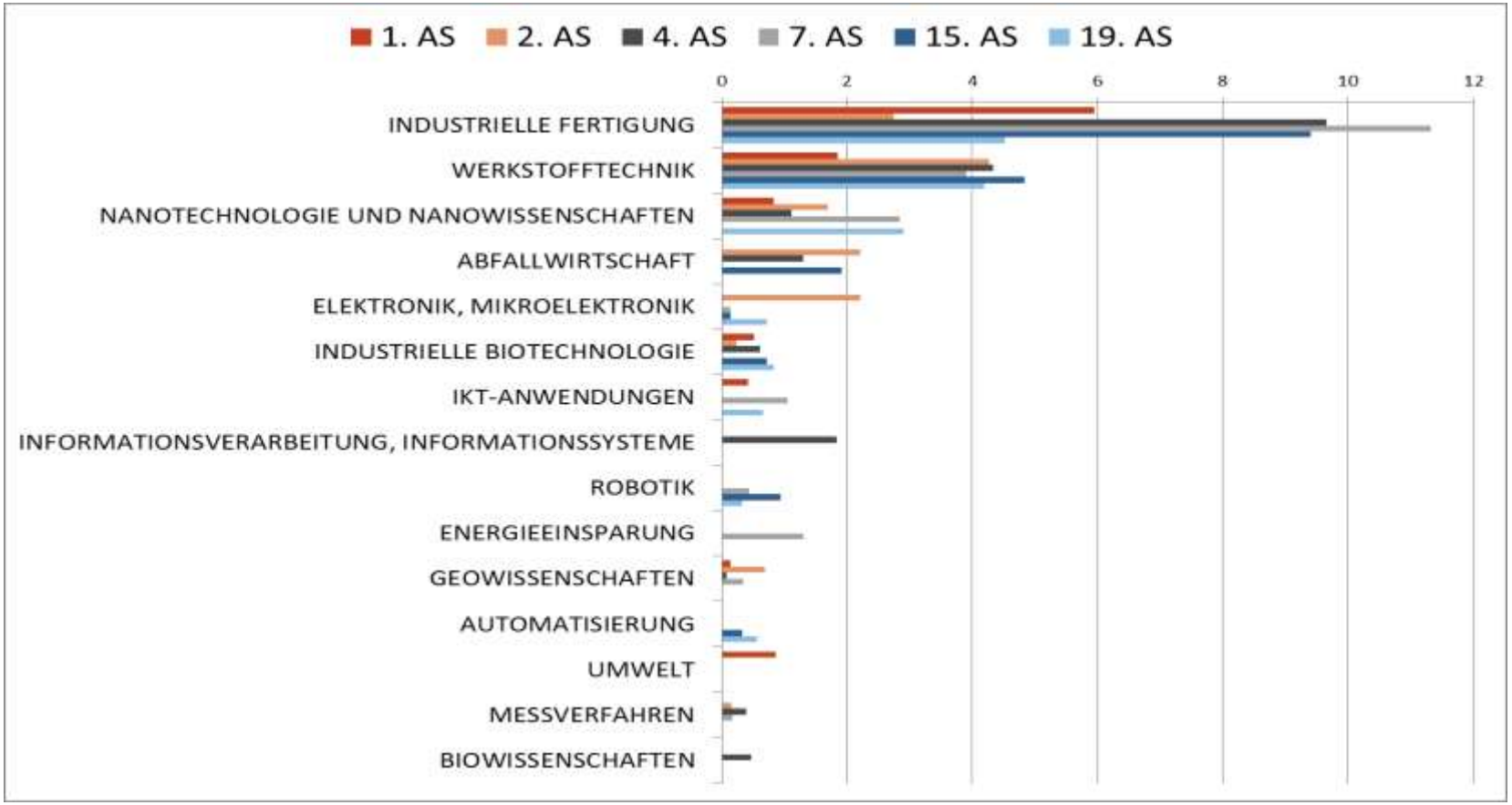
Combination of different KETs for advanced products



New proposed structure of KETs



R&D-Initiative „Production of the future“: Volume of funding



R&D-Initiative „Production of the future“: structure

- Key enabling technologies for the industrial production (TRL 2- 4: industrial research)
  - Nanotechnology, Robotics, Photonics, material sciences
- Innovative production processes (TRL 2-7: industrial research and experimental development)
  - Industry 4.0/biobased industry
- Integration of key enabling technologies within production processes within (TRL 5-7: experimental development)

International cooperation (1): M.ERA-Net: Facts

- ERA-Net: instrument funded by the EC to coordinate European funding agencies by implementing joint calls
- Topic: material science and engineering
- largest ERA-NET
- 25 European countries
- 37 funding organisations
- coordinator FFG
- lifetime 2/2016-1/2020
- systematic multi-annual joint programme addressing the whole Value-chain

- Annual call budget: € 35 Mio.
- international cooperation (Taiwan, South-Korea, Brasil, Russia, Japan)
- Next call with beginn of 2018

NanoNet-AT: The Austrian Network in Nanotechnology has been established…

- to link the Austrian nanotech-community along the value chain
- to mobilize industry and technology transfer
- to gain visibility on international level
- to promote the importance of nanotech research for companies
- to act as an between the ministry and the research community

See www.nano-net.at

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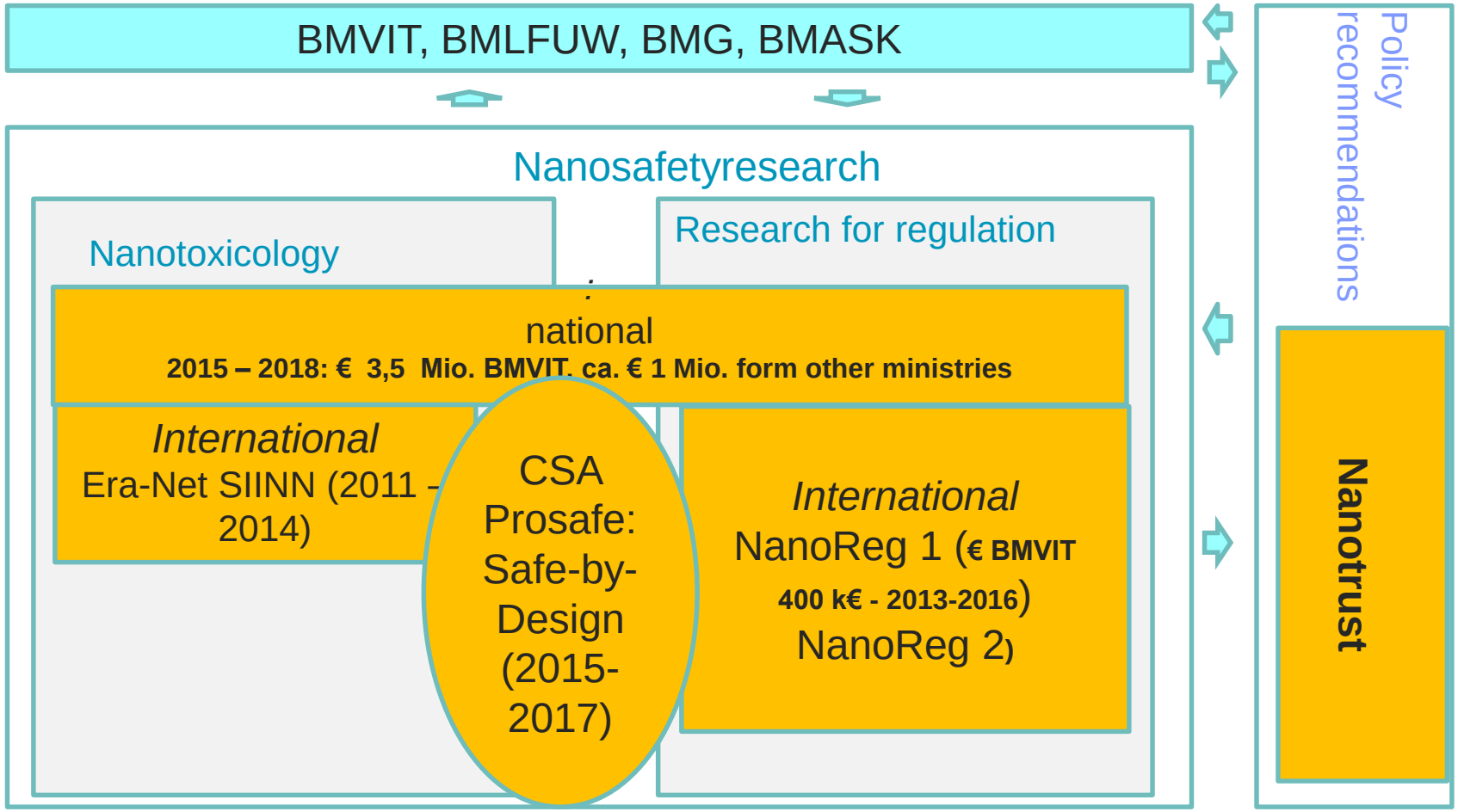
Nano-EHS-Research in Austria



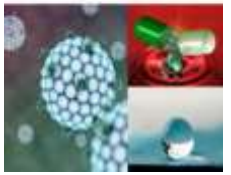
The Austrian Nano-EHS-Programme: goals and topics

- Goals
  - build-up of national expertise in Nano-EHS, in order to participate in international activities
  - closing the gap of Nano-EHS-research in Austria, esp.in the area of human health and environment
- Topics of the first three calls:
  - Risk-assesment of the use of nanomaterial's in the working-place and consumer products
  - innovative safety precautions for the use of nanomaterial's in the workplace
  - Environment: monitoring and exposition, analyses of national regulation
- national and international projects
  - Over-arching aspects of nanosafety research
  - Toxicity mechanisms
  - environmental impacts of MNMs
  - Effects of MNM on human health
  - Safe-by-design

The NanoTrust Project

- “risk radar” and a clearing house on questions of potential health and environmental risks
- interdisciplinary Team with 2 persons working at the Institute of Technology Assessment (Austrian Academy of Science)
- in the context of the “Austrian Nanotechnology Action Plan” approved by the council of ministers in march 2010

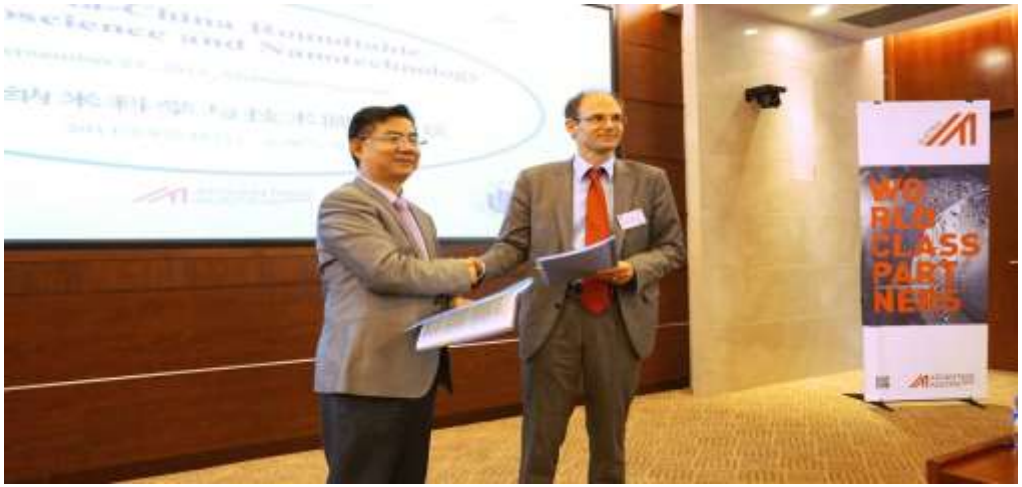
For more information see:
http://www.nanotrust.ac.at/nano.ita.en/index.html



NanoTrust Dossiers:

- Short summaries (4-6 pages, online) of the recent state of knowledge for specific topicsTarget audience:
- political decision makers, regulators, research, science journalists, interested „public“

SINO-Austrian cooperation in Nanotechnology



six funded projects

- Call with CAS:
  - Sentinel: Self-Sensing Nanoprobes for Electric and Thermal In-Situ Characterization in Electron Microscopes
  - Moraflash: Modelling of Radiation Effects in Flash Memories
  - Passion: Integrated polymer laser light source for silicon nanophotonic devices
- Call with University Shanghai:
  - Nacos: Gold Graphene Nano Composite Sensors for Biomolecule Detection
  - Nextgenupcon: Next generation upconversion nanomaterials for bioimaging with approved nanosafety by microfluidic cell assays
  - Hydroceram: Environmentally friendly ceramic filled hydrogels for additive manufacturing

Future Activites with China

- Chinese Academy of Science:
  - 4th call on Nanotechnolgy open
  - 5th call on Materials will open in January 2019
- University Shanghai
  - 3rd call on Nanotechnology open

We are looking forward to cooperate with you!

„Getting together is a begin, staying together a progress, and working together a success“ (Henry Ford, 1863 – 1947)

Questions?

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