research and development in Estonia

research and innovation

Estonia has a broad, innovative and diverse research landscape. Research is primarily carried out by universities and other public and private sector education and research institutions.

Did you know?
- Estonian company Crystalspace has been selected by Maxar Technologies, a trusted partner and innovator in Earth Intelligence and Space Infrastructure, to build two cameras that will act as a stereo pair to monitor the operations of a robotic arm that will collect regolith samples from the Moon.
- Starship Technologies in cooperation with Tallinn University of Technology developed a package delivery robot, which has been tested in more than hundred cities all over the world.

7.7 researchers per thousand employed (2019)
Excellent conditions for carrying out research projects
Highly qualified staff at the research institutes
3 times growth in the number of international researchers employed in Estonia since 2010 (compared to 2020)

scientific publications and citations

The high quality of Estonian research and researchers is also visible in research output.

The 10 most cited fields according to WoS (InCites) in 2011–2021:
(compared to global average of the field) were:

1. clinical medicine
2. plant & animal science
3. pharmacology & toxicology
4. microbiology
5. chemistry
6. physics
7. space science
8. clinical medicine
9. psychology
10. clinical medicine

For the Publications published in 2011–2018 by Estonian authors

8.99% reached the 10% of the world’s most cited publications

this places Estonia #19 in Europe

*according to European Innovation Scoreboard 2020

education

According to OECD PISA test results, in 2018 Estonian students performed the best out of all European countries in science, reading and mathematics. In the world, Estonia’s students rank 5th in reading, 8 in mathematics and 4th in science.

1 OECD, Main Science and Technology Indicators Database. www.oecd.org/sti/msti.htm (09.11.2021).
smart specialisation

Smart specialisation is focused on the following areas, which are also the national focus areas for R&D, innovation and business until the year 2035:

**Digital solutions**
- growing and developing digital nation;
- industry uses actively digital technologies;
- data management creates new business opportunities;
- safe cyberspace.

**Health tech & services**
- more efficient and accessible health services;
- patient-centred treatment and prevention, evolving personal health services;
- growing healthcare sector export.

**Valuing local resources**
- valued local resources;
- recognised bioeconomy development centre;
- the use of natural resources takes into account both the conservation of biodiversity and socio-economic impacts.

**Smart & sustainable energy solutions**
- climate-neutral energy production;
- efficient and carbon neutral energy use;
- resource-efficient businesses;
- guaranteed security of energy supply.

more information

- Estonian Research Council
  www.etag.ee/eng
- Research in Estonia
  www.researchinestonia.eu
- EURAXESS Estonia
  www.euraxess.ee

**Expenditure on R&D by source of funds 2019 (mln EUR)**
- business enterprise sector 223,2 — 49,1%
- higher education sector 07 — 0,2%
- private non-profit sector 0,9 — 0,2%
- funds from abroad 60,3 — 13,3%

**Government funding 169,4 — 37,3%**
- research grants 40,6 — 9,0%
- baseline funding 39,1 — 8,6%
- other government funding 88,9 — 19,6%

**7th framework programme**
- 466 projects
- 96,3M EUR

**Examples**
- U-CAT or Underwater Curious Archaeology Turtle robot, developed by Biorobotics Centre of Tallinn University of Technology
- Mars house prototype SHEE, developed by University of Tartu with International Space University
- Nanosatellite ESTCube-1, coordinated by Tartu Observatory and University of Tartu

**Horizon 2020**
- 696 projects
- 273,1M EUR

**Examples**
- SmartEnCity — Towards Smart Zero CO₂ Cities across Europe, participated by City of Tartu, Estonia.
- SilentBorder — aims to develop new muon scanners using natural radiation for border controls, developed by University of Tartu, GScan.
- The GDHRNet — systematically explores the theoretical and practical challenges posed by the online context to the protection of human rights, coordinated by Tallinn University.