



**FACT
SHEET**

IBM RESEARCH - ZURICH

The world is our lab

IBM Research – Zurich is one of 12 IBM Research laboratories around the globe. It was established in 1956 and is home to world-class scientists representing more than 45 nationalities. Cutting-edge research and outstanding scientific achievements—most notably two Nobel Prizes—are associated with this lab.

As the largest European branch of IBM Research, its mission—in addition to pursuing innovative research for tomorrow's information technology—is to cultivate close relationships with academic and industrial partners.

IBM Research – Zurich strives to be one of the premier places for top researchers to work, to promote women in IT and science, and to help drive Europe's innovation agenda.

A new facility for collaborative nano-scale research was opened on the IBM Zurich campus in 2011. The Binnig and Rohrer Nanotechnology Center (*top right*) is part of a strategic partnership in nanosciences with ETH Zurich, one of the world's foremost science and engineering universities.



Binnig and Rohrer Nanotechnology Center

Where business meets the future, where research meets the market

The **THINKLab** at IBM Research – Zurich is a unique place in Europe to gain insights from IBM researchers, industry and trend experts in order to tackle today's and tomorrow's challenges.

This think-tank is part of the European IBM Client Center network. It gives companies, academia and governments the opportunity to learn how IBM's R&D assets, trend research, advanced technologies and solutions can enhance their success. It is also the place where clients can get first-hand experience with innovative prototype solutions.



Campus of IBM Research – Zurich

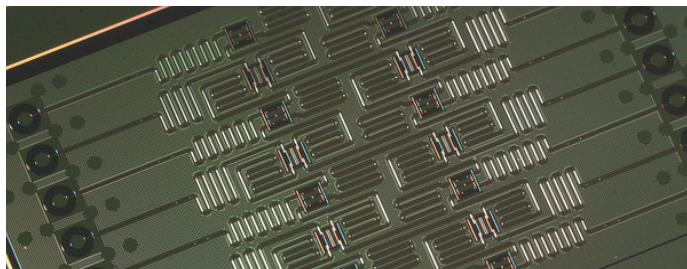


IBM Research **THINKLab** – Zurich
Your door to IBM Research in Europe

Current projects include

Quantum Computing

Scientists at IBM Research – Zurich have built up a quantum computing lab to contribute to IBM's goal of building a universal quantum computer. Once built, such a computer will have the potential to solve many problems we are not able to address with today's computers.



Layout of a 16 superconducting quantum bit device developed by IBM Research.

AI Technologies for Healthcare

IBM Research and the Swiss start-up docdok.health are developing and testing a set of IoT and machine-learning technologies to improve the quality of life of COPD (chronic obstructive pulmonary disease) patients, while reducing the financial impact on healthcare systems.

Neuromorphic Computing

IBM Research – Zurich scientists can imitate the functionality of neurons with a phase-change device that could lead to the development of neuromorphic computers with highly co-located memory and processing units to speed up cognitive computing and IoT Big Data applications.

Blockchain for the Enterprise

Blockchain is a distributed ledger technology for real-time transactions. IBM Research is developing blockchain technology to re-imagine fundamental business processes and invent new styles of secure digital interaction that will change the way the world works. Our scientists are developing secure multi-party transactions via tokenization, digital identity and digital signatures for industrial-grade blockchain applications spanning various industries. Projects include the Car eWallet for blockchain transactions, jointly developed with ZF Friedrichshafen and UBS, and crypto anchors to prevent counterfeit medical devices.

Advances in Core AI

IBM researchers have developed a new, re-usable scheme for training machine-learning models on heterogeneous compute platforms. The new algorithms can accelerate the training process up to 10 times compared to existing methods. Furthermore, using neural networks, IBM scientists have developed a cloud-based AI app to predict the reactions of organic chemical compounds. Such a tool could support chemical research by reducing the amount of time and costs of conducting experiments.

IBM Research – Zurich at a glance

Founded: 1956

Director: Dr. Alessandro Curioni

Nationalities: 45+

Collaboration H2020: 50+ projects, 500+ partners

European Research Council (ERC) Grants: 7

Nobel Laureates: 4

- 1986: Nobel Prize in Physics for the invention of the scanning tunneling microscope by Heinrich Rohrer and Gerd K. Binnig
- 1987: Nobel Prize in Physics for the discovery of high-temperature superconductivity by K. Alex Müller and J. Georg Bednorz

Research areas

• Cognitive Computing & Industry Solutions

Cognitive systems, foundations of cognitive solutions, information analytics, computational sciences, security & privacy, services research, systems biology.

• Cloud & Computing Infrastructure

Blockchain, Big Data, storage & memory technologies, security, MicroDataCenter, server I/O links, accelerator technologies.

• Science & Technology

Quantum technologies, electronic packaging, atom/molecule manipulation, silicon photonics, neuromorphic devices & systems, spin dynamics, nanotechnology, precision diagnostics, Binnig and Rohrer Nanotechnology Center.

IBM Research worldwide

For more than seven decades, IBM Research has defined the future of information technology with more than 3,000 researchers in 12 labs located across six continents.



For more information:
www.zurich.ibm.com

