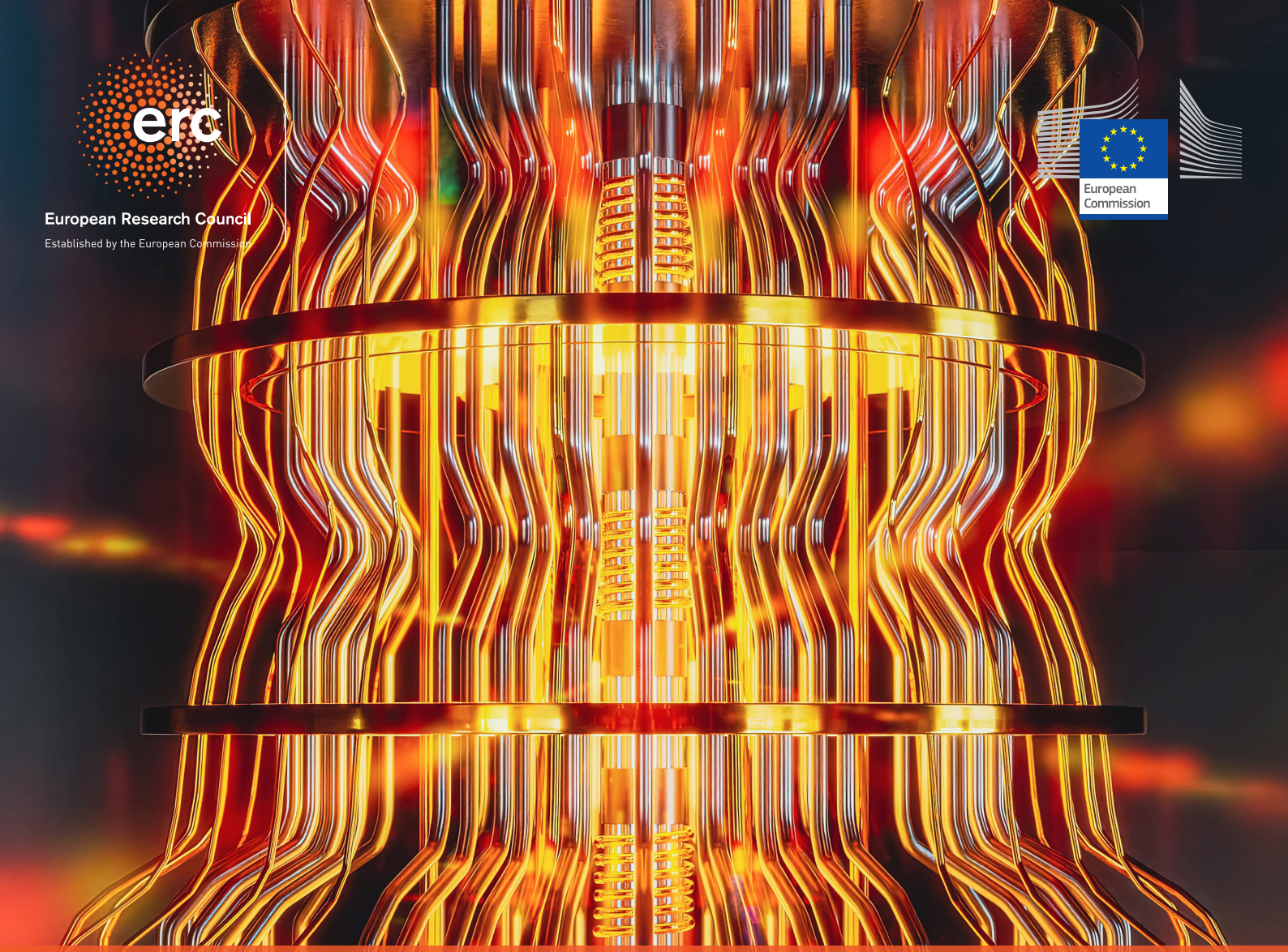

European Research Council
Established by the European Commission

European Commission

Examples of ERC-supported research contributing to the creation of companies awarded an EIC Accelerator

We show here ten companies that have received funding from the EIC Accelerator scheme and were created with the involvement of, or based on the results from, scientists funded by the ERC[1].

Quantum Technologies

Pages two to eight show examples of companies active in developing quantum technology applications. Some of them collaborate with each other and in many cases the scientists involved in the companies are part of international networks or national research centres linked to each other.

Biotech

Pages nine to eleven show examples of companies active in the biotech sector.

1 ERC grants: Starting Grant (StG), Consolidator Grant (CoG), Advanced Grant (AdG), Synergy Grant (SyG), Proof of Concept (PoC)

The Company

QuantWare

https://www.quantware.com/

Founded 2020 - Based in The Netherlands

EIC Accelerator 2022 (project DEMOQC)
https://cordis.europa.eu/project/id/190163802

QuantWare was launched with the ambition to “accelerate the usefulness of the quantum computer, while democratising hardware and expanding the field”.

The company’s scientific advisor Charles M. Marcus was awarded the **2020 SyG** NONLOCAL https://cordis.europa.eu/project/id/856526 together with Karsten Flensberg, Ferdinand Kuemmeth (Københavns Universitet Center for Quantum Devices at the Niels Bohr Institute) and Martin Leijnse (NanoLund, Center for Nanoscience, Lund University).

Charles M. Marcus was the first leader of the **Center for Quantum Devices (QDev) in Denmark**, opened in 2012 with funding from a center-of-excellence grant from the Danish National Research Foundation (DNRF). The center is hosted by the Niels Bohr Institute. From 2018 to 2021, the centre hosted **Microsoft Quantum Lab** and joined forces with them on research on engineered topological superconductors and their potential application in topological quantum computing.

Charles M. Marcus also has strong connections **with QuTech- Research institute for quantum computing and quantum internet in Delft**, which was created in 2013, following from **Synergy Grant** QC-Lab https://cordis.europa.eu/project/id/319360 awarded to Leo Kouwenhoven, Ronald Hanson, Lieven Vandersypen and Leo DiCarlo from Delft University, together with Carlo Beenakker of Leiden University. This research institute now has collaborations with industry in quantum technologies.

In 2019 **QuTech** partnered with Amsterdam, Eindhoven, Twente and Leiden universities to form a national consortium. **The Quantum Delta was born**. In 2020, the Quantum Inspire (QI) platform was launched, designed and built by **QuTech** to provide access to various quantum computation technologies.

QuantWare’s Co-Founder and CEO Matthijs Rijlaarsdam did his thesis research on the simulation of quantum computers in the Elkouss group at **QuTech**; CTO Alessandro Bruno achieved multiple breakthroughs during his more than ten years in the field, including at the DiCarlo group, also at **QuTech**.

The Company

Pasqal

https://www.pasqal.com/

Founded 2019 - Based in France, Netherlands, Canada

EIC Accelerator 2022 (project Qu&Co-Flow)
https://cordis.europa.eu/project/id/190146292

Pasqal is a leading Quantum Computing company that builds quantum processors from ordered neutral atoms in 2D and 3D arrays to bring a practical quantum advantage to its customers.

In January 2022, Pasqal merged its business with the Dutch quantum algorithm and software developer Qu&Co, combining Qu&Co's portfolio of algorithms with Pasqal's full-stack neutral-atom system to accelerate the quantum path to commercial applications.

In January 2023, Pasqal announced it had raised €100 million in equity to accelerate the development of its neutral-atom quantum-computing platform and deliver a 1,000-qubit quantum computer by 2024. It has now secured more than €140 million in financing (up to April 2024).

Co-founder & scientific advisor Alain Aspect was awarded the **2022 Nobel Prize in Physics** (with Anton Zeilinger and John F. Clauser) "for experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science". They laid the foundation for a new era of quantum technology. He is a CNRS Distinguished Scientist and Head of the Atom Optics Group, Laboratoire Charles Fabry, Institut d'Optique, Palaiseau, France.

The ERC funded Alain Aspect through a **2010 AdG** for his project Quantum Atom Optics from Entangled Pairs to Strongly Correlated Systems https://cordis.europa.eu/project/id/267775 that builds on his pioneering work on demonstrating Bell's inequality violation and goes one step further in establishing basic tools for quantum optics experiment and single atom detection and manipulation.

The chief scientific officer of **Pasqal** is Antoine Browaeys, who received a **StG in 2009** https://cordis.europa.eu/project/id/239920 and an **AdG in 2020** https://cordis.europa.eu/project/id/101018511.

The ERC also funded Anton Zeilinger's **AdG** project **QIT4QAD (2008)** https://cordis.europa.eu/project/id/227844 that focused on developing novel technologies for quantum information science, demonstrated new concepts for quantum computation and carried out a number of fundamental experiments in quantum mechanics.

The Company

Qubit Pharmaceuticals

https://qubit-pharmaceuticals.com/

Founded 2020 - Based in France

EIC Accelerator 2022 (project ATLAS)
https://cordis.europa.eu/project/id/190141418

Qubit Pharmaceuticals brings unparalleled accuracy and precision to drug discovery and design, using quantum physics to develop treatments for major diseases.

The proprietary technologies, fruit of over 30 years of research, make it possible to develop novel drug candidates and innovative modes of action against targets previously considered too complex.

The company has secured more than $25 million in financing (up to April 2024).

Co-founders:

Matthieu Montes, Professor of Bioinformatics, Cnam (Conservatoire national des arts et métiers). The ERC funded him through a **StG in 2014** https://cordis.europa.eu/project/id/640283 and a **PoC in 2022** https://cordis.europa.eu/project/id/101069190.

Jean-Philip Piquemal, Director of the Theoretical Chemistry Laboratory (Sorbonne University/CNRS) and specialist in the modelling of biological systems applied to pharmacy and medicine. The ERC funded him through a **SyG in 2018** on Extreme-scale mathematically-based computational chemistry https://cordis.europa.eu/project/id/810367 together with Yvon Maday from Sorbonne Université, Laura Grigori from INRIA and Eric Cancès from École des Ponts ParisTech.

In September 2023, **Qubit Pharmaceuticals** and **Pasqal** (see page 3), together with Unitary Fund, a 501(c)(3) non-profit[2] in quantum technology, were awarded a prize in the Win Wellcome Trust's "**Quantum for Bio**" Program call for projects. They received $4.5 million of the total $40 million awarded through the various milestones under the Quantum for Bio program.

https://www.hpcwire.com/off-the-wire/pasqal-and-qubit-pharmaceuticals-join-with-unitary-fund-to-win-wellcome-trusts-quantum-for-bio-program/

2 Section 501(c)(3) is the portion of the US Internal Revenue Code that allows for federal tax exemption of nonprofit organizations that meet the code's requirements. These nonprofits may be considered public charities, private foundations, or private operating foundations, which we'll explain in more detail later.

The Company

Quandela

https://www.quandela.com/

Founded 2017- Based in France

EIC Accelerator 2023 (project sepoqc)
https://cordis.europa.eu/project/id/190188855

Quandela, a startup working on the creation of the first photonic quantum computer, has secured a substantial investment exceeding €50 million.

The funding comes from various sources, including the French government through the France 2030 Plan, banking and other investors.

Pascale Senellart, Co-Founder and CSO, was awarded a **StG in 2011** https://cordis.europa.eu/project/id/277885 and a **PoC in 2017** https://cordis.europa.eu/project/id/789463 to develop an affordable prototype of a cryo-cooled plug-and-play single photon source.

She was awarded the CNRS Silver Medal in 2014, made Fellow of The Optical Society in 2018, and elected member of the French Academy of Sciences in 2022.

She developed a novel methodology to control the coupling between a quantum dot and a microcavity. **Quandela** was founded based on her microcavity designs with the aim to develop single photon light sources.

Nobel prize awardee and ERC grantee Alain Aspect is member of the scientific board of the company.

The Company

IQM Quantum Computers

https://www.meetiqm.com/

Founded 2018 - Based in Finland, Germany, France, Spain and Singapore

EIC Accelerator (project BIGQEC)

IQM Quantum Computers has raised a total of €233.8M in funding over 8 rounds. Their latest funding was raised on 28 February, 2024 from the EIC Accelerator. IQM Quantum Computers is funded by 21 investors.

Co-founder and chief scientist **Mikko Möttönen**, was funded by the ERC with:
StG in 2011 https://cordis.europa.eu/project/id/278117
CoG in 2015 https://cordis.europa.eu/project/id/681311
PoC in 2016 https://cordis.europa.eu/project/id/727305
PoC in 2020 https://cordis.europa.eu/project/id/957440
AdG in 2021 https://cordis.europa.eu/project/id/101053801

His achievements have been recognised with several awards and honours, including the Nokia Recognition Award, the Väisälä Science Prize, the Innovation Professor Award.

The Company

Alpine Quantum Technologies

https://www.aqt.eu/

Founded 2018 - Based in Austria

EIC Accelerator (project QCDC)
https://cordis.europa.eu/project/id/190118992

AQT works on general-purpose quantum information processors that will support a broad range of applications in various industries. They use a scalable trapped-ion approach combining unmatched physical performance, extraordinary qubit control, and demonstrated optical networkability.

It has the goal to commercialise an Austrian quantum computer. AQT is supported by the Federation of Austrian Industries Tyrol, the FFG Austrian Research Promotion Agency, and the University of Innsbruck.

It was one of the 2023 finalists of the **The Spinoff Prize**, "established by Nature Awards in partnership with Merck to showcase and celebrate global excellence in the commercialisation of research through the creation of spinoff companies".

AQT emerged from nearly one-quarter of a century of research on ion-trap quantum computing carried out at the University of Innsbruck by physicists **Peter Zoller** and **Rainer Blatt**, and, later, Monz. Commercializing quantum computers step by step (nature.com)

Co-founder **Rainer Blatt** (University of Innsbruck), recipient of several prizes and awards, was awarded an **AdG in 2008** https://cordis.europa.eu/project/id/227959 and a **PoC in 2012** https://cordis.europa.eu/project/id/334952

Co-founder **Peter Zoller** (Institute for Theoretical Physics, University of Innsbruck), Wolf Prize winner in 2013, was awarded a **SyG in 2012** https://cordis.europa.eu/project/id/319278 together with **Immanuel Bloch** (Chair of Quantum Optics, Ludwig-Maximilians-Universität Munich and Max-Planck-Institute of Quantum Optics, Garching), **Jean Dalibard** (Collège de France and Laboratoire Kastler Brossel, Paris), **Ehud Altman** (Weizmann-Institute of Science in Rehovot, Israel).

Advisory board members **Ignacio Cirac** and **Jonathan Home** were awarded an **AdG in 2016** https://cordis.europa.eu/project/id/742102 and a **CoG in 2018** https://cordis.europa.eu/project/id/818195 respectively.

The Company

Quside

www.quside.com

Founded 2017 - Based in Spain

EIC Accelerator 2023 (project RPU)
https://cordis.europa.eu/project/id/101145131

Quside's proprietary technology permits the generation of fully unpredictable random digits at high rates and in a chip-size form factor, thereby satisfying key requirements for next generation security technologies as well as high-performance computing platforms.

The company's technology was partially funded and pushed towards the market through two Proof of Concept projects, granted to Antonio Acín and Morgan Mitchell, both researchers at ICFO (Institute of Photonic Sciences, Barcelona). These projects led to the development of a market-ready quantum random number generator for next-generation cybersecurity technologies.

Morgan Mitchell was awarded a **StG** in **2011** https://cordis.europa.eu/project/id/280169 and a **PoC** in **2015** https://cordis.europa.eu/project/id/713682.

Antonio Acín was funded with:
2007 StG https://cordis.europa.eu/project/id/209267
2011 PoC https://cordis.europa.eu/project/id/309460
2013 CoG https://cordis.europa.eu/project/id/617337
2018 AdG https://cordis.europa.eu/project/id/834266

Publications linked to Antonio Acín's ERC-funded projects were identified among the publications with major impact on the evolution of **quantum cryptography** in a series of focused thematic studies recently conducted to reveal the ERC contribution to the scientific evolution of selected highly dynamic areas, in which important discoveries were made in recent years.

The Company

QUBEDOT

https://qubedot.com/

Founded 2019 - Based in Germany

EIC Accelerator 2023 (project iSMILE)

QubeDot is getting ready for negotiations for a series A investment round – supported by the EIC Fund.

Since his **2013 StG** BetterSense https://cordis.europa.eu/project/id/336917 and successive **PoC grants in 2016** https://cordis.europa.eu/project/id/727297 **and 2020** https://cordis.europa.eu/project/id/957527, **Daniel Prades** (University of Barcelona) has been working closely with the Institute of Semiconductor Technology (IHT) at TU Braunschweig, led by Andreas Waag.

The institute was the semiconductor GaN foundry that Daniel needed to implement ideas for innovative sensors. **Daniel Prades** and Andreas Waag came up with an idea of a microscope that could be made just with microchips (the microLED arrays). They patented it together and applied for the ChipScope project https://cordis.europa.eu/project/id/737089 which was funded by a FET Open grant (the predecessor of EIC Pathfinder).

Further development was funded by the EIC Transition SMILE project https://cordis.europa.eu/project/id/952135 and Andreas Waag's start-up QubeDot became a company partner of the SMILE project.

Finally, QubeDot succesfully applied to EIC Accelerator with project iSMILE.

The Company

EVerZom

http://everzom.com/

Founded 2019 - Based in France

EIC Accelerator 2022 (project ACROBAT)
https://cordis.europa.eu/project/id/190194936

EVerZom is a nanomedicine biotech company providing a large scale of Good manufacturing practice (GMP) platform of extracellular vesicles. It develops a bioproduction platform to produce extracellular vesicles at a commercial scale in a GMP compliant way for pharmaceutical companies with applications in regenerative medicine and drug delivery. Extracellular vesicles that encompass exosomes, microvesicles, and apoptotic bodies are the tools used by cells to communicate with each other.

Co-founder and president of the scientific board Amanda Brun was funded with a **StG in 2019** https://cordis.europa.eu/project/id/852791

Her work at CNRS, Université Paris Cité, mainly focuses on high-performance approaches for biotherapy and bioproduction based on extracellular vesicles and led to four licensed patent applications and the founding the start-ups **EVerZom** and **Evora Biosciences**.

The Company

LiMM Therapeutics

https://www.limmtx.com/

Founded in 2017 – Based in France

EIC Accelerator 2021 (project PILCKY)

LiMM is a biopharmaceutical company that harnesses the molecular cross-talk between neuronal and innate lymphoid cells within peripheral tissues. By decoding the language of the neuroimmune cross-talk, LiMM develops therapeutic products to preserve health and treat inflammatory, infectious and metabolic diseases.

Co-founder **Henrique Veiga-Fernandes** was funded by the ERC via:
2007 StG https://cordis.europa.eu/project/id/207057
2013 PoC https://cordis.europa.eu/project/id/620227
2014 CoG https://cordis.europa.eu/project/id/647274
2017 PoC https://cordis.europa.eu/project/id/764332

He won several prizes and awards as a scientist and as an innovator. He founded the start-up **StemCell2MAX** in 2015 and **LiMM Therapeutics** in 2017.

To unlock therapeutic solutions for the benefit of patients, LiMM builds on two papers from **Veiga-Fernandes**' lab on decoding the language of the neuroimmune cross-talk.

The following companies, beneficiaries of an EIC Accelerator, are linked to ERC-funded researchers.

Company Name	EIC Accelerator	Short Description	Country	ERC grantees involved	ERC grantee role
ALICE & BOB	CatQubit	Universal quantum computers with self-correcting cat-qubit technology	France	Emmanuael Flurin; Philippe Campagne Ibarcq	Scientific Board members
EVerZom	ACROBAT	Toward democratisation of extracellular vesicles-based therapies	France	Amanda Silva Brun	Co-founder and Scientific Board President
GLYCANOSTICS	ProSCAN	Prostate cancer diagnostics using a non-invasive test based on innovative glycan-based scanning	Slovakia	Jan Tkáč	Chief Scientific Officer
Perseus Biomics	Perseus MAP	Microbiome Abundance Profiling: Precision microbiome profiling for insights into human health & research	Belgium	Johan Hofkens	Chair of Scientific Advisory Board
Qubit Pharmaceuticals	ATLAS	Next generation HPC/QC in silico drug discovery platform leveraging the latest advances in high-performance and quantum computing	France	Matthieu Montes; Jean-Philip Piquemal	Co-founders
APIX ANALYTICS	GREENPIX	First miniaturized universal gas analyser for all renewable gases in all their extensive and complex composition at all production and consumption phases including Hydrogen purity for fuel cells	France	Thomas Ernst	n.a.
LiMM Therapeutics	PILCKY	Harnessing the therapeutic Potential of Innate Lymphoid Cells to prevent and treat KidneY-related diseases	France	Jose Henrique Veiga Fernandes	Founder
Pasqal	Qu&Co-Flow	Quantum software platform for multiphysics simulations	Netherlands	Alain Aspect	Co-founder & Scientific Advisor

Company Name	EIC Accelerator	Short Description	Country	ERC grantees involved	ERC grantee role
Alpine Quantum Technologies	QCDC	Quantum Computers for Data Centers	Austria	Rainer Blatt; Peter Zoller	Co-Founders
C12 Quantum Electronics	HiFiQC	High-Fidelity Quantum Computing with Carbon Nanotubes	France	Takis Kontos	Scientific Advisor
QUANDELA	sepoqc	Scalable Entangled-Photon based Optical Quantum Computers	France	Pascale Senellart; Alain Aspect	Co-Founder Scientific Board
PEPTOMYC	MYCureX	First-in-class myc inhibitor: the making of a breakthrough cancer therapy	Spain	Laura Soucek	Co-founder, CEO
QUSIDE TECHNOLOGIES	RPU	Quantum-based Randomness Processing Units (RPUs) for High-Performance Computation and Data Security	Spain	Morgan Mitchell; Antonio Acín	n.a.
IQM FINLAND	BIGQEC	Building industrial-grade quantum computers with error correction and mitigation capabilities	Finland	Mikko Möttönen	Co-Founder
NECTIN THERAPEUTICS	NTX1088	First-in-class anti-PVR mAb NTX1088 - a novel oncology drug that unlocks the power of human immune system and revolutionizes cancer care	Israel	Ofer Mandelboim	Scientific Advisory Board
QUBEDOT	iSMILE	iSMILE - integrated scalable microLED engines	Germany	Daniel Prades	n.a.