



Topological Crystalline Insulator Nanowires

Fact Sheet

Project Information

TOCINA

Grant agreement ID: 834290

[Project website](#)

DOI

[10.3030/834290](https://doi.org/10.3030/834290)

Project closed

EC signature date

6 May 2019

Start date

1 September 2019

End date

28 February 2025

Funded under

EXCELLENT SCIENCE - European Research Council (ERC)

Total cost

€ 2 500 000,00

EU contribution

€ 2 500 000,00

Coordinated by

TECHNISCHE UNIVERSITEIT
EINDHOVEN



Netherlands

Project description

An unprecedented experimental platform could spur progress in quantum computing

Quantum bits, or qubits, can store and process so much more information than a conventional bit because they can be in two states at the same time. Unfortunately, these quantum effects are very fragile, and any external influences can cause the qubit to 'collapse'. Scientists are now talking about topological quantum computers that will encode their qubits in a type of quasiparticle we are not even sure exists. The so-called topological properties of these quasiparticles make them particularly robust

to outside interference. The EU-funded TOCINA project is developing a novel experimental platform that will enable scientists to explore these foundations in ways not previously possible.

Fields of science (EuroSciVoc)

[engineering and technology](#) > [materials engineering](#) > **[crystals](#)**

[natural sciences](#) > [mathematics](#) > [pure mathematics](#) > **[topology](#)**

[engineering and technology](#) > [electrical engineering, electronic engineering, information engineering](#) > [electronic engineering](#) > [computer hardware](#) > **[quantum computers](#)**

[natural sciences](#) > [physical sciences](#) > [electromagnetism and electronics](#) > **[semiconductivity](#)**

[natural sciences](#) > [physical sciences](#) > [electromagnetism and electronics](#) > **[superconductivity](#)**



Keywords

[Nanowire](#)

[Semiconductor](#)

[Superconductor](#)

Programme(s)

[H2020-EU.1.1. - EXCELLENT SCIENCE - European Research Council \(ERC\)](#)

MAIN PROGRAMME

Topic(s)

[ERC-2018-ADG - ERC Advanced Grant](#)

Call for proposal

[ERC-2018-ADG](#)

[See other projects for this call](#)

Funding Scheme

[ERC-ADG - Advanced Grant](#)

Host institution



TECHNISCHE UNIVERSITEIT EINDHOVEN

Net EU contribution

€ 2 500 000,00

Total cost

€ 2 500 000,00

Address

GROENE LOPER 3
5612 AE Eindhoven
 Netherlands 

Region

Zuid-Nederland > Noord-Brabant > Zuidoost-Noord-Brabant

Activity type

Higher or Secondary Education Establishments

Links

- [Contact the organisation](#) 
- [Website](#) 
- [Participation in EU R&I programmes](#) 
- [HORIZON collaboration network](#) 

Beneficiaries (1)



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Last update: 1 April 2025

Permalink: <https://cordis.europa.eu/project/id/834290>

European Union, 2025