



Optical Topologic Logic

Fact Sheet

Project Information

OPTOlogic

Grant agreement ID: 899794

[Project website](#)

DOI

[10.3030/899794](https://doi.org/10.3030/899794)

EC signature date

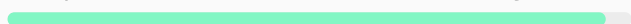
28 May 2020

Start date

1 September 2020

End date

31 August 2025



Funded under

EXCELLENT SCIENCE - Future and Emerging Technologies (FET)

Total cost

€ 3 930 250,00

EU contribution

€ 3 930 250,00

Coordinated by

FUNDACIO INSTITUT DE
CIENCIES FOTONIQUES



Spain

Project description

Exploiting light-induced and controlled topology for fast and energy-efficient logic operations

About 10 % of the energy produced globally is used to power electronic circuits that carry out logic operations for the global internet and in consumer devices. The EU-funded OPTOlogic project therefore aims to develop a computing architecture that takes advantage of light-induced and controlled topology for energy-efficient logic operations. To artificially induce and control topological protected states, the project will create a new class of dissipationless quantum devices generated through spatially and temporally structured ultrafast pulses of light. The quantum devices prepared will use minimal energy to move and store information, while dramatically increasing computing power. By increasing the energy efficiency and speed of logical

operations, the project could have a significant economic, environmental and social impact.

Fields of science (EuroSciVoc)

[natural sciences](#) > [computer and information sciences](#) > [internet](#)

[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](#) > [optics](#) > [laser physics](#)



Keywords

[Optics](#)

[Ultrafast Physics](#)

[Strong field physics](#)

[HHG](#)

[Light-Matter Interactions](#)

[Topological Phase Transition](#)

Programme(s)

[H2020-EU.1.2. - EXCELLENT SCIENCE - Future and Emerging Technologies \(FET\)](#)

MAIN PROGRAMME

[H2020-EU.1.2.1. - FET Open](#)

Topic(s)

[FETOPEN-01-2018-2019-2020 - FET-Open Challenging Current Thinking](#)

Call for proposal

[H2020-FETOPEN-2018-2020](#) 

[See other projects for this call](#)

Sub call

H2020-FETOPEN-2018-2019-2020-01

Funding Scheme

[RIA - Research and Innovation action](#)

Coordinator



FUNDACIO INSTITUT DE CIENCIES FOTONIQUES

Net EU contribution

€ 1 735 875,00

Total cost

€ 1 735 875,00

Address

AVINGUDA CARL FRIEDRICH GAUSS 3
08860 Castelldefels

Spain

Region

Este > Cataluña > Barcelona

Activity type

Research Organisations

Links

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

Participants (4)



COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES

France

Net EU contribution

€ 758 500,00

Address

RUE LEBLANC 25
75015 PARIS 15

Region

Ile-de-France > Ile-de-France > Paris

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 758 500,00



FORSCHUNGSVERBUND BERLIN EV

 Germany

Net EU contribution

€ 450 000,00

Address

RUDOWER CHAUSSEE 17

12489 Berlin 

Region

Berlin > Berlin > Berlin

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 450 000,00



MAX-PLANCK-GESELLSCHAFT ZUR FORDERUNG DER WISSENSCHAFTEN EV

 Germany

Net EU contribution

€ 664 000,00

Address

HOFGARTENSTRASSE 8

80539 Munchen 

Region
Bayern > Oberbayern > München, Kreisfreie Stadt

Activity type
Research Organisations

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

Total cost
€ 664 000,00



LIGHT ON

France
Net EU contribution
€ 321 875,00

Address
2 RUE DE LA BOURSE
75002 Paris

SME
Yes

Region
Ile-de-France > Ile-de-France > Paris

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

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

Total cost
€ 321 875,00

Last update: 26 May 2025

Permalink: <https://cordis.europa.eu/project/id/899794>

