



Artificial Catalysts for Endergonic Reduction by Electron Bifurcation

Fact Sheet

Project Information

BifurCAT

Grant agreement ID: 101116544

DOI

[10.3030/101116544](https://doi.org/10.3030/101116544)

EC signature date

6 September 2023

Start date

1 January 2024

End date

31 December 2028

Funded under

European Research Council (ERC)

Total cost

€ 1 500 000,00

EU contribution

€ 1 500 000,00

Investment in EU policy priorities

Digital agenda



Clean air



Artificial
Intelligence



Climate action



Biodiversity



Coordinated by

TECHNISCHE UNIVERSITÄT
MÜNCHEN



Germany

Project description

Towards energy-efficient chemical reactions using electron bifurcation

Endergonic catalysis refers to chemical reactions that require an input of energy to proceed and is implicated in the conversion of low-energy substances into high-

energy products. Although useful for creating complex materials from simple ones, endergonic catalysis is challenging. Nature drives such energy-requiring (endergonic) reactions by coupling them with energy-releasing (exergonic) reactions. The ERC-funded BifurCAT project aims to create artificial catalysts that mimic this process. This will enable the use of common, environmentally friendly compounds such as formic acid to drive difficult reactions, leading to valuable pharmaceuticals and agrochemicals. Overall, the study will offer an energy-efficient strategy for chemical synthesis.

Fields of science (EuroSciVoc)

[natural sciences](#) > [chemical sciences](#) > **[catalysis](#)**

[natural sciences](#) > [biological sciences](#) > [biochemistry](#) > [biomolecules](#) > [proteins](#) > **[enzymes](#)**



Keywords

[Biomimetic Catalysis](#)

[Sustainable Chemistry](#)

Programme(s)

[HORIZON.1.1 - European Research Council \(ERC\)](#)

MAIN PROGRAMME

Topic(s)

[ERC-2023-STG - ERC STARTING GRANTS](#)

Call for proposal

[ERC-2023-STG](#)

[See other projects for this call](#)

Funding Scheme

[HORIZON-ERC - HORIZON ERC Grants](#)

Host institution



TECHNISCHE UNIVERSITAET MUENCHEN

Net EU contribution

€ 1 500 000,00

Total cost

€ 1 500 000,00

Address

Arcisstrasse 21
80333 Muenchen

 **Germany** 

Region

Bayern > Oberbayern > München, Kreisfreie Stadt

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Beneficiaries (1)



TECHNISCHE UNIVERSITAET MUENCHEN

 **Germany**

Net EU contribution

€ 1 500 000,00

Address

Arcisstrasse 21
80333 Muenchen



Region

Bayern > Oberbayern > München, Kreisfreie Stadt

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Total cost

€ 1 500 000,00

Last update: 11 September 2023

Permalink: <https://cordis.europa.eu/project/id/101116544>

European Union, 2025