



DNA-guided self-organized active materials

Fact Sheet

Project Information

DNAGAM

Grant agreement ID: 888997

[Project website](#) 

DOI

[10.3030/888997](https://doi.org/10.3030/888997) 

Project closed

EC signature date

5 March 2020

Start date

1 June 2020

End date

30 April 2022

Funded under

EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost

€ 196 708,49

EU contribution

€ 196 707,84

Coordinated by

THE CHANCELLOR MASTERS
AND SCHOLARS OF THE
UNIVERSITY OF CAMBRIDGE

 United Kingdom

Project description

Materials science: lessons from embryonic development

Morphogenesis is the biological process responsible for producing the complex shapes of organisms from the blastocyst. It is a multistep process orchestrated by biomolecules known as morphogens. Inspired by morphogenesis, the EU-funded DNAGAM project is working towards the first-ever synthetic biocompatible material that can self-organise in a programmable and autonomous manner. The biomaterial incorporates a DNA-based chemical network capable of generating single-stranded DNA morphogens in a unique yet spatially predictable manner. The DNA

morphogens will guide kinesin motor proteins and microtubules to form morphological structures within hydrogels. The project's results will not only provide invaluable insight into how morphogen patterns drive material self-organisation, but also expand materials science applications in soft robotics and biological environments.

Fields of science (EuroSciVoc)

[natural sciences](#) > [biological sciences](#) > [genetics](#) > **DNA**

[natural sciences](#) > [physical sciences](#) > [condensed matter physics](#) > **soft matter physics**

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

[engineering and technology](#) > [electrical engineering, electronic engineering, information engineering](#) > [electronic engineering](#) > [robotics](#) > **soft robotics**

[medical and health sciences](#) > [clinical medicine](#) > **embryology**



Programme(s)

[H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions](#)

MAIN PROGRAMME

[H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility](#)

Topic(s)

[MSCA-IF-2019 - Individual Fellowships](#)

Call for proposal

[H2020-MSCA-IF-2019](#)

[See other projects for this call](#)

Funding Scheme

[MSCA-IF-EF-CAR - CAR – Career Restart panel](#)

Coordinator



THE CHANCELLOR MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE

Net EU contribution

€ 73 765,44

Total cost

€ 73 766,09

Address

TRINITY LANE THE OLD SCHOOLS
CB2 1TN Cambridge

 United Kingdom 

Region

East of England > East Anglia > Cambridgeshire CC

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Participants (1)



SORBONNE UNIVERSITE 

 France

Net EU contribution

€ 122 942,40

Address

21 RUE DE L'ECOLE DE MEDECINE
75006 Paris 

Region

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

Activity type

Higher or Secondary Education Establishments

Links

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

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

Total cost

€ 122 942,40

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European Union, 2025