Agenda

• Horizon Europe and the framework programmes
• What is CORDIS
• Presentation of a project fact sheet on the CORDIS website
• Example of articles
• Thematic packs
• Videos and podcasts
• Keep in touch via social media
Horizon Europe and framework programmes

• Horizon Europe is the current EU research and innovation programme
• Runs from 2021-2027 and is the biggest multilateral research programme in the world
• Funds research projects across the EU and in partner countries
• Budget of 95.5 billion euro (nearly 20 billion more than Luxembourg’s GDP)
• Follows the framework programmes 1–7 and Horizon 2020
• Aims to spread results and disperse excellent knowledge and technologies
• For this we have CORDIS
What is **CORDIS**?

- CORDIS is the source of information about EU funded research projects
- Publishes information about research under the Horizon Europe programme, previously Horizon 2020 and the framework programmes
- Supported projects have a project page which in some cases is complemented with journalistic articles written by CORDIS
- Financed by the European Commission’s Directorate-General for Research and Innovation
- Managed by the Publications Office of the European Union, based in Luxembourg
CORDIS facts and figures

• Earliest projects from 1984
• Over 140,000 EU-financed projects with factsheets
• Over 23,000 journalistic articles written about these projects
• CORDIS website is in six languages: English, French, German, Polish, Italian and Spanish
• Other media such as podcasts and videos
• Present on Twitter, Facebook and YouTube
CORDIS brings you the results of EU research and innovation

Welcome to CORDIS, where you can access comprehensive information about EU Research & Development projects.

Whether you’re a researcher, innovator, or just curious, here you’ll find information on projects, topics, and publications funded by the EU’s research programs - in multiple languages.

CORDIS belongs to the Research and Innovation community platform of the European Commission and complements the Funding and tender opportunities website, where you can apply for funding and search for partners.

Thematic Packs
Keep up with the latest breakthroughs enabled by EU funding with our multilingual collections of articles focusing on a specific theme.

- Promoting clean and energy efficient solutions for households
  5 September 2023
- What can strontium tell us about the birth of patriarchy?
  7 September 2023
- Pandemics: learning from the past - anticipating the future
  26 July 2023

Videos
Connect with EU science thanks to our short explanatory videos focusing on the scientific content and exploitation aspects of EU research projects.

- Make the connection
- #28

Podcasts
Dive into some of the key scientific solutions being developed by EU-funded researchers to address the major societal challenges that we all face today.

- Discover more
Results in Brief
Read general public summaries of the main outcomes at the end of each project, explaining the achievements and highlighting the next steps.

News
Discover ongoing projects with our news articles based on media reports or project announcements.

HORIZON dashboard
Learn key facts & figures on Horizon proposals, projects and participants with an interactive tool with filter options by theme, geography, organisation profile, and more.

The emergence of Europe after the collapse of the Roman Empire
8 September 2023

Firing up to fight wildfires
11 September 2023

EU Research and Innovation data at your fingertips
Stratification of Rheumatoid Arthritis: CompuTational models to personalise mAnagement strategies for difficulTo-Treat disease

Objective

Difficult-to-treat rheumatoid arthritis (D2T RA) is an area of huge unmet medical need with major socio-economic consequences for patients and society. Contributing factors have been identified including co-morbidities, drug-related, biological and behavioral factors. However, identifying these patients with specific underlying and overlapping problems, or patients at risk, is a big challenge in practice. Currently, treatment decisions are random and not sufficiently patient tailored nor data-driven. Therefore, the STRATA-FIT consortium sets out to develop and validate computational models to identify and stratify D2T RA patients into clinically relevant phenotypes using real world clinical data. We will also measure biomarkers of inflammation to further characterise these phenotypes.

Subsequently, we will execute a pilot study with a clinical decision aid based on our models to assess the effectiveness of personalised treatment strategies.

In parallel we will develop a computational model to identify early RA patients at risk of developing D2T RA. By doing so, not only will we provide better treatment for patients with D2T RA, but also work towards its prevention in early RA patients. STRATA-FIT will establish a unique European Learning Healthcare System, using a privacy-proof, state-of-the-art federated learning infrastructure in which patients with, or at risk of D2T RA are identified, stratified and treated in a personalised manner.

STRATA-FIT builds on previous work by consortium partners, who initiated and lead the European Task Force on developing points to consider for managing D2T RA. It brings together clinical experts, patient research partners and clinical-, biological-, data- and computer-scientists to tackle this major clinical challenge. When successful, STRATA-FIT will lead to more (cost-) effective D2T RA care and will greatly improve the quality of life of D2T RA patients while lowering the burden of D2T RA on Europe’s health care systems and society.

Fields of science

medical and health sciences → clinical medicine → rheumatology
Keywords
- Difficult-to-treat rheumatoid arthritis
- Federated Learning
- European Learning Health Care System
- real-world data
- decision aid
- stratification
- machine learning
- clinical prediction modelling

Programme(s)
- HORIZON 2.1 - Health
- HORIZON 2.1.5 - Tools, Technologies and Digital Solutions for Health and Care, including personalised medicine

Topic(s)
- HORIZON-HLTH-2022-TOOL-12-01-two-stage - Computational models for new patient stratification strategies

Call for proposal
- HORIZON-HLTH-2022-TOOL-12-two-stage

See other projects for this call

Funding Scheme
- HORIZON-RIA - HORIZON Research and Innovation Actions
## Participants (7)

<table>
<thead>
<tr>
<th>Sort alphabetically</th>
<th>Sort by Net EU contribution</th>
<th>Expand all</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSTITUTO DE MEDICINA MOLECULAR JOAO LOBO ANTUNES</td>
<td>Net EU contribution</td>
<td>€ 807 186,25</td>
</tr>
<tr>
<td>KAROLINSKA INSTITUTET</td>
<td>Net EU contribution</td>
<td>€ 786 645,00</td>
</tr>
<tr>
<td>MEDIZINISCHE UNIVERSITAET WIEN</td>
<td>Net EU contribution</td>
<td>€ 847 775,00</td>
</tr>
<tr>
<td>MEDICAL DATA WORKS BV</td>
<td>Net EU contribution</td>
<td>€ 589 696,25</td>
</tr>
<tr>
<td>LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN</td>
<td>Net EU contribution</td>
<td>€ 0,00</td>
</tr>
<tr>
<td>KLINIKUM DER UNIVERSITAT MUNCHEN</td>
<td>Net EU contribution</td>
<td>€ 800 336,25</td>
</tr>
<tr>
<td>REGION STOCKHOLM</td>
<td>Net EU contribution</td>
<td>€ 155 662,60</td>
</tr>
</tbody>
</table>
Objective

In vitro diagnostic (IVD) technologies have revolutionized healthcare, yet remain confined to the laboratories. As witnessed during the COVID-19 pandemic, this traditional centralized approach was not sufficient to prevent and manage viral outbreaks because it massively failed to deliver quick and cost-effective diagnosis. The ongoing pandemic further emphasizes the growing need to urgently bring lab-quality diagnosis to the hands of end users (i.e., point-of-care, POCT). Despite high expectations from Lab-on-Chip technologies, they failed so far to disrupt the IVD market due to their complexity of integration/operation, high cost, off-chip sample preparation, poor scalability, to mention only a few. The FORTIFIEDx consortium aims to revolutionize the POC IVD field by making use of novel multifunctional biocompatible polymers and their (micro)structuring with mass fabrication technology to develop for the first time a true sample-to-result POCT test. We will develop a FORTIFIEDx microfluidic-based patch capable of both biofluids (self-)sampling via hollow microneedles and immediate analysis of this sample on the very same patch in a completely self-powered manner. Two unmet clinical needs, posing epidemic/pandemic threats to both the developed and developing world, are selected: (1) sexually transmitted diseases, in particular simultaneous diagnosis of HIV and Syphilis, to enable timely diagnosis of patients not always able to reach centralized settings due to stigma or financial difficulties and (2) viral haemorrhagic fever, in particular Ebola and Lassa viruses, to battle their highly contagious and deadly outbreaks. To tackle this challenging aim, the interdisciplinary and experienced FORTIFIEDx consortium (2 universities, 5 research institutes and 2 SMEs from 6 countries) will combine insights from material science, engineering and microfabrication, microfluidic technology development, bioassay development, clinical validation and life cycle assessment.
<table>
<thead>
<tr>
<th>Participant</th>
<th>Net EU contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOANNEUM RESEARCH FORSCHUNGSGESSELLSCHAFT MBH</td>
<td>€ 999 900,00</td>
</tr>
<tr>
<td>MONTANUNIVERSITAET LEOBEN</td>
<td>€ 405 492,00</td>
</tr>
<tr>
<td>POLYMER COMPETENCE CENTER LEOBEN GMB</td>
<td>€ 415 855,00</td>
</tr>
<tr>
<td>PRINS LEOPOLD INSTITUUT VOOR TROPISCHE GENEESKUNDE</td>
<td>€ 667 203,00</td>
</tr>
<tr>
<td>UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK</td>
<td>€ 609 795,00</td>
</tr>
<tr>
<td>TEMICON GMB</td>
<td>€ 344 615,00</td>
</tr>
<tr>
<td>ZDALNY SERWIS SP. Z.O.O.</td>
<td>€ 217 500,00</td>
</tr>
<tr>
<td>CENTRE NATIONAL DE FORMATION ET DE RECHERCHE EN SANTE RURALE DE MAFERINYAH</td>
<td>€ 60 425,00</td>
</tr>
</tbody>
</table>
Articles sorted in 11 different categories

- INDUSTRIAL TECHNOLOGIES
- CLIMATE CHANGE AND ENVIRONMENT
- ENERGY
- FUNDAMENTAL RESEARCH
- SPACE
- SOCIETY
- DIGITAL ECONOMY
- HEALTH
- FOOD AND NATURAL RESOURCES
- SECURITY
- TRANSPORT AND MOBILITY
Types of articles

Battery cooling solution revolutionises heavy-duty electrification

WATTALPS's cutting-edge battery cooling technology could transform off-road vehicles and heavy-duty equipment, paving the way for a sustainable future in various industries.

Game-changing advances in protein design and engineering

How much have different countries contributed to climate change since 1850? A new study ranks countries' culpability based on their emissions of key greenhouse gases.
Grasspaper to make Europe’s paper industry more sustainable

The European paper industry uses vast amounts of wood pulp each year, so a new approach using paper made from grass fibres could bring huge environmental benefits.
Despite much of the world moving online, paper is still in high demand. About 400 million tons of paper are produced worldwide each year.

Wood pulp from trees accounts for around half of this, consuming about 40% of the global industrial wood harvest. This can contribute to deforestation, harming biodiversity, releasing carbon dioxide into the atmosphere and disrupting ecosystems. New solutions are needed.

The EU-funded Grasspaper project has created a new raw material for the European paper industry, a paper made from grass fibres. Grasspaper’s innovative new mechanical process is compatible with standard paper production equipment, and grasspaper products could not only help reduce the impact on trees but also act as a replacement for single-use plastics – bringing further environmental benefits.

“The CO2 emissions from our production process are close to zero,” says Michael Schatzschneider, director of sales at Creapaper and Grasspaper project coordinator.

**A new paper paradigm**

Grasspaper is created from a blend of grass fibres and recycled paper, a production that requires significantly less water and energy than traditional wood pulp-based paper manufacturing.

The fibres can be sourced from a variety of fast-growing, renewable grass species, which do not require extensive land use or contribute to deforestation.

The Grasspaper project developed a new patented mechanical process for creating the new raw material.

“The hay goes through a process of cutting, grinding and cleaning by air, and the pulp is then compressed for transport,” Schatzschneider explains.
“All that is needed to produce grasspaper is electricity, and we use around 150 KWh to produce one ton of grasspaper. Our electricity provider is EON and the electricity comes from a European renewable mix,” he adds.

The product leaving the paper mill – either ‘Grasspaper’ or ‘Grass carton board’ – can be converted into packaging or other consumer goods that are normally made from paper. This ranges from tissue (toilet paper, kitchen rolls and napkins) to solid carton board, widely used in packaging.

**Bringing the technology to commercial markets**

Through the Grasspaper project, the team developed the manufacturing process further and took steps to bring it closer to the market.

First they assembled and optimised the prototype facility. Once the prototype was ready, they ran a series of tests with European paper mills to trial the new manufacturing system. Feedback from these tests let the team optimise paper specifications. Finally, the team produced different grasspaper showcases and products, and initiated the commercialisation phase.

“Paper and packaging are simple everyday products, but the supply chains are highly complex,” Schatzschneider explains. This involves harvesting, pulping, papermaking, converting all this into products or packaging and selling to customers. “Our goal was to become a part of this complex supply chain in a minimally invasive way,” he notes.

**A greener paper**

Schatzschneider says the EU funding helped them organise and structure the project, financing operations, letting them create the prototype and therefore securing new investors.

“Grasspaper is simple way of saving CO2 emissions and helping to reduce the stress on forests every day,” adds Schatzschneider. “Reforestation is one of the most efficient ways to achieve our ambitious climate goals.”

**Keywords**

Grasspaper, grass, paper, climate, forests, paradigm, products
Discover other articles in the same domain of application

- **Tapping into the potential of oxygen to study the terrestrial carbon cycle**
  - 6 September 2023

- **Heating applications tested with hydrogen blends**
  - 5 September 2023

- **A natural, sustainable alternative to pesticides**
  - 5 September 2023

**Share this page**

**Download**

- XML
- PDF

**Last update: 23 June 2023**
Thematic packs

A Thematic pack is a collection of articles about a specific subject

• Project Info Packs – describes the aims of new and ongoing projects

• Results Packs – has results of completed or nearly completed projects
Thematic Packs

Multilingual collections of up-to-date articles, bringing you information about EU-funded projects and results

Projects Info Packs
Selections of projects in their early stages focusing on a specific research theme

Results Packs
Collections of results, from finished or nearly completed projects, focusing on a specific theme that you can apply in your domain

Coming soon
Selections of projects, in their early or mature stages, showcasing synergies between Horizon Europe and other EU funding programmes

Recent Packs

Open Innovation Test Beds to accelerate European innovation
Leading the way in European Supercomputing
Crowdsourced tools sniff out the location of nasty odours

Combining smart technology with odour monitoring techniques and a lot of nostrils, D-NOSES pushes the under-regulated blight of odour pollution up the environmental and policy agendas.

Frequent exposure to odours, at home or at work, can cause a range of ailments, including headaches, lack of concentration, stress, insomnia and respiratory problems.

“The nose proves to be a highly effective sensor!”

After noise, odours are the second most complained about environmental pollutant globally. However, most techniques to measure odours don’t adequately account for their impact on citizens. This whole area is under-regulated,” says D-NOSES (Distributed Network for Odour Sensing, Empowerment and Sustainability) project coordinator Rosa Arias, previously from the Ibercivis Foundation, the project host, now founder and CEO of Science for Change (website in Spanish).

The EU-funded citizen science D-NOSES project improved a specially designed app to crowdsource real-time geopositioned odour data, augmented by the experiences of those affected.

The project tested its methodology in 10 pilots across eight European countries, alongside Chile and Uganda for wider perspectives. Some of the pilots’ results have already been published, such as those for Italy, Greece and Chile.

In Spain, OdourCollect recently won the prestigious Prismas (website in Spanish) award for science outreach.

In total the project collated over 10,000 odour observations worldwide, from over 1,200 citizens.

“Thanks to our engagement model’s gender perspective, 70% of observations were collected by women,” adds Arias. “Overall our pilots validated our methodology, with the Barcelona and Italian pilots aligning with the results of traditional odour studies. The nose proves to be a highly effective sensor!”

Influencing policy

The D-NOSES event, “Revisiting Odour Pollution in Europe,” hosted online by Greek MEP Maria Sypouni, resulted in the inclusion of odour pollution and citizen science in the EU Action Plan “Towards Zero Pollution: for Air, Water and Soil.”

The team also hope that their green paper will prompt discussion about a comprehensive European odour policy, and lead to a white paper.

Mapping tools

The project followed University College London’s Extreme Citizen Science approach, which prioritises bottom-up practices, with an awareness of local needs, to help ensure citizen participation and inclusivity during all research phases.

The strategies to engage members of the public were adapted for each pilot, with ethnographic research followed by targeted activities in museums and festivals, alongside appearances in local media. Once engaged, participants took part in sensory walks and odour training sessions, alongside data analysis workshops.

At the heart of D-NOSES was the OdourCollect app, built on an earlier iteration created by the MYGEOS project and designed to enable affected communities to map odour pollution and advocate change. During the 10 pilots, participants suggested improvements to the app’s functionality, such as mapping pleasant scents in addition to unpleasant ones.

The flagship Barcelona pilot focused on the Forum area of the city which had endured the impact of waste and wastewater treatment facilities for over 20 years. Users were trained to recognise different smells including waste, sewage, sludge and biogas, and map them. This data was then linked to industrial operations using the app’s historical analysis. Over 600 observations were reported over a 12-month period, involving 86 participants.

Another outcome has been the International Odour Observatory, an interactive online resource where users input and consult data crowdsourced globally. Advocacy of policy changes was also undertaken locally during the pilots, as well as more generally with an advocacy toolkit, policy briefs and the strategic roadmap for governance.

The teams are currently standardising their methodology in Spain, while also working on a municipal model to guide odour regulation. “Our objective is that citizen data is used as evidence by authorities, to prompt action,” concludes Arias. “Crucially, our methodology can be replicated in other contexts and applied to other socio-environmental issues.”

PROJECT

D-NOSES – Distributed Network for Odour Sensing, Empowerment and Sustainability

COORDINATED BY

Ibercivis Foundation in Spain

FUNDED UNDER

Horizon 2020 Science with and for Society

CORDIS FACTSHEET

cordis.europa.eu/project/id/789315

PROJECT WEBSITE

cordis.eu
Videos & Podcasts

‘Make the connection, with EU-science’ is a series of explanatory videos focusing on the scientific content and exploitation aspects of EU research.

Listen to the latest CORDIScovery podcasts on selected trending topics.

Latest Videos

https://cordis.europa.eu/thematic-packs
Water: quality and security

22 March is United Nations World Water Day, so this episode of CORDIScovery is on water: its quality and security of supply. We will travel from the high Himalayas and delve into the secret lives of freshwater snails to explore water cycles and the latest techniques for monitoring pollution.
Keep in touch via social media

@CORDIS_EU
@CORDIS_EU
@CORDISdotEU
https://cordis.europa.eu/en
Questions?
Thank you!