European Commission

DID **YOU** KNOW

EU funded research is shaping **your future**

Research and Innovation

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European Commission
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2017 Directorate-General for Research and Innovation

FOREWORD

Each year the European Union is helping scientists, researchers and innovators from across Europe and beyond to work together to improve the lives of our citizens and make our future brighter and better.

Much has been achieved by the many projects in which Europe's best brains are supported. In this booklet, you will find some examples of those projects.

Did you know that thanks to EU funding...?
Read on to find out!

Robert-Jan Smits
Director-General
Directorate-General for Research and Innovation
European Commission

BEYOND OUR EARTH

... thanks to EU funding, seven new planets have been discovered?

The most extraordinary space discovery in decades that currently represents our best chance of detecting alien life was made by European Research Council grantee Michaël Gillon of the University of Liège.
His EU-funded project discovered seven potentially habitable planets that orbit an ultra-cool dwarf star just 40 light years from Earth.

Read more about the SPECULOOS project: *http://europa.eu/!Rf76hJ*

LESS IS BETTER

... thanks to EU-funded research on breast cancer, unnecessary chemotherapy treatment can be avoided?

In developed countries, a woman's chance of getting breast cancer is around one-in-eight. Chemotherapy is effective but can have serious side effects. In fact, up to one-in-five early breast cancer patients could be receiving too much chemotherapy. EU-funded research has shown that combining traditional methods for assessing a tumour's aggressiveness with a new laboratory test helps set the amount of chemotherapy needed.

Read more on how EU-funded research fights cancer:
http://europa.eu/!KD46Xc

SOLAR JET FUEL

... EU-funded researchers have produced 'solar' jet fuel from water and carbon dioxide?

Researchers have successfully demonstrated the entire production chain for renewable kerosene using solar energy. Concentrated sunlight is used to trigger a reaction between CO_2 extracted from air with water to produce avionics grade jet fuel. The technology has the potential to provide secure, sustainable and scalable supplies of jet fuel as well as diesel and gasoline, and even plastics.

Read more about the SOLAR-JET project: *http://europa.eu/!yn79YX*

DREAM HOUSE

... soon your new house could be printed for you?

3D printing is set to revolutionise the construction industry allowing for the manufacture of bespoke building products. And an EU-funded project is working towards producing a commercially viable onsite machine combining design parameters with production. The aim is to make the construction industry more cost-effective and resource efficient. The technology is being combined with more traditional techniques to offer an all-in-one solution.

Read more about the HINDCON project: *http://europa.eu/!tQ77cK*

SMARTEN UP

... an EU-funded project has shown how to make smartphones even smarter?

The way you hold your smartphone, how you swipe its screen, and even how you move when it's in your pocket says something very personal about you. An EU-funded project has demonstrated how sensor technology embedded in smartphones can add an extra layer of security to the fingerprint readers, facial recognition software and iris scanners. The new feature will make mobile banking services even more secure.

Read more about the AMBER project: *http://bit.ly/2zurFDR*

PROTECTION AGAINST EBOLA

... thanks to EU funding, 1.6 million Ebola vaccine doses are available to save lives?

New life-saving treatments, diagnostics, and a vaccine have been developed thanks to funding the EU mobilised for emergency research at the height of the recent Ebola outbreak. Thousands of people have been protected against Ebola with a vaccine developed by Johnson & Johnson working with the EU-funded 'EBOVAC' project. Over 1.6 million doses of the vaccine are stockpiled for use in case of emergency.

Read more on how EU-funded research fights Ebola:
http://europa.eu/!PN86bT

IS IT SAFE?

... that an EU-funded project has developed bomb-resistant bags to improve air travel safety?

EU funding has led to the development of the first lightweight technology able to contain the devastation caused by exploding bombs hidden in airplanes' baggage compartments. The bomb-resistant liner-bags are strong enough to withstand the energetic effects of a blast without breaking. The liner-bags have passed stringent safety tests and are ready to be installed in the cargo holds and cabins of passenger aircrafts.

Read more about the FLY-BAG2 project: *http://europa.eu/!tU67FN*

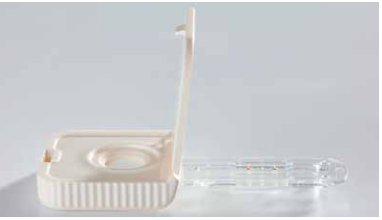
ENERGISED

... EU funding has made the development of a super battery possible?

EU funding has helped an Estonian company produce an energy storage device called ultracapacitor, which is a 100 times more powerful than an ordinary battery, and can withstand one million recharge cycles. Skeleton's ultracapacitors are based on graphene – a two dimensional form of carbon with remarkable properties. The company has raised €13 million to build a manufacturing facility in Germany capable of producing millions of these new ultracapacitor a year.

Read more about the SKLCarbonP2 project:
http://europa.eu/!xD37bv

FASTER DIAGNOSIS



... a revolutionary device to detect bacteria receives EU prize for innovation?

A breakthrough medical device that can diagnose bacterial infection in less than ten minutes from a single drop of blood has received a €1 million EU 'Horizon Prize' for innovation. The 'MINICARE HNL' system will reduce the amount of antibiotics prescribed, and so help tackle increasing antimicrobial resistance which is becoming a global health problem.

Read more about the Horizon Prize on Better Use of Antibiotics: *http://europa.eu/!cH38jh*

DROP IN THE OCEAN

... EU funding will help to keep us safe from falling satellites?

A European company has developed a unique decommissioning device for satellites that survive the intense heat of atmospheric re-entry. The device steers falling satellites into the high seas. The company 'D-ORBIT' was able to develop this device thanks to EU funding for innovative small and medium sized enterprises. A great example of truly 'market-creating innovation' helping to keep us safe!

Read more about the D-Orbit project: *http://europa.eu/!cW39ck*

GROWING FOR OIL

... EU-industry funded project reclaims barren land to produce oil?

Hillsides in the Mediterranean area are often so dry and stony that they can't be used to grow food. However, an industry-led EU project is showing how oil extracted from seeds from a hardy non-food crop can be refined on a commercially viable scale to produce products such as cosmetics and bio-plastics. Turning barren ground into productive farmland will regenerate local communities and attract investment.

Read more about the FIRST2RUN project: *http://europa.eu/!nQ43TJ*

ROBOT CARE

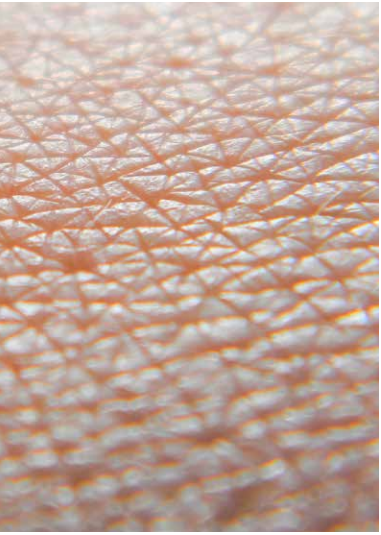
... EU-funded robots are helping the young and the old?

Cancer can be particularly distressing for young children and so EU-funded scientists have created a robot - 'Little Casper'. Currently being tested in a hospital in Lisbon, Casper wanders around boosting the morale of young cancer patients. There is robot help for the elderly as well. Another team of EU-funded scientists are developing reliable people-friendly robot assistants to help the elderly deal with everyday domestic tasks.

Read more about the MOnarCH project: *http://europa.eu/!Vy37Xn*

GROWING SKIN

... thanks to EU funding, groundbreaking research on plants saves the life of a young boy?



An international group of scientists has saved the life of a seven-year-old boy suffering from a devastating genetic skin disorder. The team successfully replaced almost all of his damaged skin with laboratory-grown, genetically modified skin. The technique is based on groundbreaking EU-funded research on plant DNA – the molecular code that defines the characteristics of all living things. A game-changer discovery for regenerative medicine.

Read more about the NOVABREED project: *http://europa.eu/!TQ33Fv*

SNIFFER DOG

... EU funding has helped develop an anti-smuggling electronic 'sniffer dog'?

Criminals who want to smuggle dangerous or illegal substances into Europe could soon find themselves foiled by a new set of high-tech anti-smuggling tools. EU-funded researchers have developed an electronic device made up of multiple highly sensitive sensors, each attuned to detect a different chemical substance. This electronic 'sniffer dog' can detect illegal drugs, explosives, chemical agents, and even people. But unlike its canine alternative, it never gets tired.

Read more about the C-BORD project: *http://bit.ly/2qnBgD1*

A STRONGER HEART

... EU funding has led to a durable engineered human heart valve that grows with the patient?

Replacing a heart valve is a major operation, leaving the patient with the prospect of further surgery. This is because of the limitations of mechanical or animal-sourced replacement valves. An EU-funded project has tested a new approach using donated human heart valves stripped of material that could activate the patient's immune system. So far, 121 patients have been treated and there is evidence of adaptive growth in children.

Read more about the ESPOIR project: *http://europa.eu/!PM34Hv*

CLEAN SKY

... the EU is working with industry to reduce aircraft emissions and noise?

Researchers and innovators in the joint EU-industry partnership 'Clean Sky' have developed and tested 'Open Rotor' – an innovative type of aircraft engine which has two sets of exterior rotor blades turning in opposite directions. The new design could cut fuel consumption and CO_2 emissions by 30% compared with engines currently in service. This is just one of the many 'Clean Sky' breakthroughs to reduce aircraft emissions and noise levels.

Read more about how EU's partnership with industry is making aircraft greener and quieter: *http://bit.ly/2B5jj1O*

GREEN SHIPS ON A BLUE SEA

... EU-funded researchers are on a mission to cut pollution from ships?

The EU is investing over €17 million in new technologies for greener ships. CO_2 emissions will be reduced by 25%, and toxic emissions such as sulphur oxide, nitrogen oxide and particulate matter will be eliminated.
This EU-funded project has selected eight close-to-the-market solutions that are being integrated into small to mid-sized vessels used for cargo and maritime operations, as well as leisure and inland shipping.

Read more about the LeanShips project: *http://europa.eu/!XR44vJ*

NO ENTRY FOR MOSQUITOS

... EU-funded research is saving children's lives in Africa?

90% of all malaria deaths occur in Africa, mostly affecting very young children. Malaria infected mosquitoes usually enter houses through open air-vents in the eaves, attracted by the scent of the occupants. An EU-funded project has developed a simple, inexpensive tubular ventilation device with an electrostatic 'sticky' mesh coated with insecticide. Local construction companies have already installed the device in more than 1800 households in Tanzania with many more to follow.

Read more on how EU-funded research fights malaria:
http://europa.eu/!VT84Cn

CLEAN RUNNING BUSES

... the EU and industry clean-up buses?

Road traffic pollution is a major problem in many cities but we can't eliminate passenger vehicles altogether. One carbon-free approach being tested in cities across Europe is a fleet of hydrogen fuel cell powered buses. They are just like normal buses but are powered by electricity generated using fuel cell technology developed by industry with EU support. These cells only need hydrogen and air and emit harmless water vapour.

Read more about how EU's partnership with industry is putting zero emission buses on European streets: *http://europa.eu/!JM38Rx*

NATURE TO THE RESCUE

... EU funding helps test new ways to fight infections?

Each year around 800 000 Europeans receive artificial body parts to help restore them to good health – but nearly 8% will suffer from post-implant infection. An EU-funded project, therefore, is testing whether bacteria-fighting molecules in marine microalgae could hold the answer. This would reduce patient distress and help cut the cost of treating complications by an estimated €7 billion each year.

Read more about the NOMORFILM project: *http://europa.eu/!qU37wV*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Science and technology touch almost every part of our daily lives. The food we eat, the medicines we take and healthcare we receive, transport, communications, protecting our environment, how we work and how we play: the list is endless!

This is why each year the European Union is helping scientists, researchers and innovators from across Europe to work together. Because by working together we can achieve more.

Today, the EU is funding thousands of active projects involving scientists, technologists and engineers. This short booklet highlights just a few examples of the impact their work is having on our daily lives.

MORE INFORMATION

https://horizon-magazine.eu/

http://ec.europa.eu/research/infocentre/

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