Annex: examples of projects to be funded from IF 2016 call for proposals

How inks help green technologies

The aim of the FLUID project is to conceive and prepare ink formulations that enable unique new optical effects, improving for example the characteristics of solar cells, or algae bioreactors, where efficiencies can be enhanced with near infrared light. The goals of this project include finding a suitable printing technique for these inks. The infrastructure and patenting knowhow within the leading chemical company BASF, where the project will take place, maximises the potential for the successful commercialisation of its results.

The Individual Fellow who will carry out the project is Dr Roberto Vadrucci, who was awarded his doctorate in 2016.

Project: Functional Low-Intensity Light Upconverting Inks for Everyday Applications (FLUID)
Host organisation: BASF SE, Ludwigshafen, Germany
MSCA funding: EUR 159 000 over 2 years

Giving new tools to economic policy-makers

The GaSLS project will investigate the balance between profits and wages in the economies of developed and emerging countries and across industries. This is crucial to the fiscal and monetary policy of governments, which is currently based on certain assumptions about the component elements of national income that evidence now shows to be over simplistic.

The Individual Fellow who will carry out the project is Dr Aikaterini Karadimitropoulou, who was awarded her doctorate in 2012.

Project: The Role of Global and Sectoral Factors in Labour Share Fluctuations (GaSLS)
Host organisation: Bank of Greece, Athens, Greece
MSCA funding: EUR 153 000 over 2 years

Making the treatment of glaucoma more effective

Glaucoma is a common eye pathology that can lead to blindness. As it is a progressive disease, longer-term treatment is required for its control, based mainly on the regular use of eye drops. The ENCOGLAP project will determine the characteristics and conditions that influence the will of patients to follow the treatment. The experiments will be carried out at one of the leading multi-disciplinary eye research centres in Europe.

The Individual Fellow who will carry out the project is Dr Nery Garcia Porta, who was awarded her doctorate in 2015.

Project: Environmental Conditions in Glaucoma Patients (ENCOGLAP)
Host organisation: Anglia Ruskin University, Chelmsford, United Kingdom
MSCA funding: EUR 195 000 over 2 years

Making city transport more resilient to unusual events

The PRISM project will design, implement and test methodologies to predict transport demand in a city better, whenever it is faced by a major disturbance such as a strike or bad weather. Such circumstances can dramatically change the normal usage patterns of modes of transport, which need to adapt to unusual events in order to maintain mobility. The approach

of the PRISM project is to combine latest research from transport engineering and computer science.

The Individual Fellow who will carry out the project is Prof Francisco Camara Pereira, who was awarded his doctorate in 2005. He has recently returned to Europe after several years of research in Singapore and at the Massachusetts Institute of Technology (MIT) in the USA.

Project: Probabilistic Prediction for Smart Mobility Under Stress Scenarios (PRISM)
Host organisation: Danish Technical University, Kgs Lyngby, Denmark
MSCA funding: EUR 212 000 over 2 years

Helping agriculture to deal with a lack of water

It is essential to optimise agriculture for a changing climate, when less water will be available, and a growing population. Understanding of the impact, mechanisms and traits underlying drought tolerance in agricultural plant species is therefore vital. The AgroPHYS project will investigate how plants protect themselves against damaging desiccation. This research will involve an automatic plant-based sensor to guide irrigation management. It will predict productivity relative to water consumption in agricultural plant species that have different water use strategies.

The Individual Fellow who will carry out the project is Dr Celia Rodríguez Domínguez, who was awarded her doctorate in 2014. She will spend two years working in Australia at the University of Tasmania (Hobart), which has world-class research facilities that are essential for the project, before returning to the Institute of Natural Resources and Agrobiology (Seville, Spain).

Project: Understanding how plants overcome drought by controlling stomatal function: applicability and impacts on agriculture (AgroPHYS)
Host organisation: Agencia Estatal Consejo Superior de Investigaciones Cientificas (CSIC), Institute of Natural Resources and Agrobiology, Seville, Spain
MSCA funding: EUR 263 000 over 3 years

Making concrete buildings and bridges last longer

This project will facilitate the use of fibre-reinforced polymer reinforcing bars in the concrete structures all around us. The corrosion problem of steel reinforcing bars severely limits the lifetime of conventional reinforced concrete structures. Due to the currently incomplete understanding of concrete reinforced by fibre-reinforced polymer, the existing design guidelines are not comprehensive, and this restricts its application in real-life. The project will tackle the knowledge gaps that hinder this technology.

The Individual Fellow who will carry out the project is Dr Pui-Lam Ng, who was awarded his doctorate in 2007.

Project: Sustainable Fibre-Reinforced Polymer Concrete Structures (SusFRPRC)
Host organisation: Vilniaus Gedimino Technikos Universitetas, Vilnius, Lithuania
MSCA funding: EUR 131 000 over 2 years