



**Press release**

14 October 2011

**ERC funds innovative projects to bring good ideas to market**

**The European Research Council (ERC) has today announced the first results of its new funding initiative, the Proof of Concept. These 'top up' grants, worth up to €150,000 each, are designed to help ERC-funded blue sky research maximise value. In total, 30 top researchers, already holding ERC grants across Europe, will be given this additional support to bridge the gap between their research and the earliest stage of a marketable innovation. The funding can cover activities related to for instance intellectual property rights, technical validation, market research or investigation of commercial and business opportunities.**

The projects, selected through peer review evaluation, treat topics ranging from health to telecommunication: research on needle-free injections of vaccines, safer mobile communications, responses to consumers' concerns on health and food safety, as well as devices controlling e.g. wheel chairs manoeuvred with the nose simply by sniffing. With a very limited part of the whole ERC budget, the initiative can unleash considerable innovation potential.

Commissioner for Research, Innovation and Science, Máire Geoghegan-Quinn, said: *"In this time of economic crisis, investing in excellence and innovation in Europe is vital. This targeted backing can help high potential ERC projects capture the maximum value from frontier research. We need to stimulate innovation and bring more ideas to market."*

ERC President Professor Helga Nowotny commented: *"The "proof-of-concept" scheme has been set up to provide a bridge for ideas emerging from frontier research that might be attractive for markets. Innovation takes place in companies. We offer to ERC grantees the possibility to probe and prove the innovative potential of their ideas and we trust that many of them will find their way to be transformed into productive outcomes."*

The success rate is around 40%. A total of 78 proposals were submitted in June to the first deadline of this call. The second deadline is on 8 November 2011.



## Some examples of projects selected for funding

### Needle-free, rapid and safe injections for patients

In public opinion, vaccines and injections are often associated with fear and risks of infection. This project aims at changing this thinking: researchers have discovered that when a laser pulse is precisely directed into a liquid-filled capillary, a vapour bubble is instantaneously produced. It emits a shock wave, which then creates a thin, ultra-fast micro-jet (i.e. supersonic, up to 1000m/s). The jets can be 10 times smaller than the diameter of the micro-capillary. The project will explore the possibility to commercialise needle-free injections of vaccines and drugs for both humans and animals. Ultimately, it could have tremendous applications: it would not only limit consumables and reduce infection risks, but it could also be used for larger campaigns of vaccination in refugees' camps for instance.

*Researcher:* Detlef Lohse (Advanced Grant 2010)

*Host institution:* Universiteit Twente (NL)

*Project title:* Needle-free injection with supersonic microjets (Needle-free)

**Links:**

Researcher's [page](#)

ERC Advanced Grant project on Cordis: [PhysBoil](#)

### Safer mobile communications for consumers

The last decade witnessed a remarkable pace of change in the area of new technologies, which dramatically transformed modern life. In parallel, the need for communication networks to be more secure to face cyber-attacks or wiretapping has become urgent. Several big corporations and governments have put in place systems to ensure quantum secure communication networks. However, such sophisticated systems are not yet available to ordinary consumers. This project aims to enable quantum key distribution to secure transmission of a secret key by encoding information in single photons so that any eavesdropping could be detected. By focusing on mobile devices used by consumers, this research would allow users to generate a secure key on their mobile phone, smartphone or tablet thanks to for instance a remote bank teller machine.

*Researcher:* Jeremy O'Brien (Starting Grant 2009)

*Host institution:* University of Bristol (UK)

*Project title:* Quantum secure communication for mobile networks (QNET)

**Links:**

Researcher's [page](#)

ERC Starting Grant project on Cordis: [IQP](#)

### Controlling electronic devices and computers by sniffing

During the ERC project, the research team built a sniff-sensor that used signals generated by sniffs to power external machines. The device, called "sniffcontroller", notably improved the lives of individuals who participated in the study, allowing completely paralyzed people to communicate text, surf on the web and even to drive an electric wheelchair. The team will now aim at optimizing the device and creating a pilot platform to order it on the web, test it, and provide feedback. In order to find out whether it can be transformed into a product for the large public, they will also explore the applications of the sniffcontroller for survivors of stroke, trauma or neurodegenerative diseases, as well as for healthy people with temporary disabilities.

*Researcher:* Noam Sobel (Starting Grant 2007)

*Host Institution:* Weizmann Institute of Science (IL)

*Project title:* Sniff-Controlled Devices (Sniffcontrol)

**Links:**

Research group [Website](#)

ERC Starting Grant project on Cordis: [ODORSPACE](#)



### Explore the potentialities of biomaterials for human body

Biomaterials can be inserted in the human body to replace or support a biological function. However, their use is still limited because they fail to fully integrate with living cells and tissues. In the first phase of their ERC project, researchers found that their supramolecular polymer platform had huge potential as biomaterials as it allowed optimal integration with the living body. While supramolecular polymers have the same properties as conventional polymers, they can also be processed at low temperatures and their morphological and mechanical properties are then easily controlled. The project aims at analysing the commercialisation of the technology platform on the market. Its medical applications could be essential in improving the treatment for dialysis, reducing rejection of transplants or for any innovative sutures.

*Researcher:* E. W. Meijer (Advanced Grant 2010)

*Host Institution:* Technische Universiteit Eindhoven (NL)

*Project title:* Commercial feasibility of supramolecular polymers in life sciences and medical technology

**Links:**

Researcher's [CV](#)

ERC Advanced Grant project on Cordis: [Supocosys](#)

### Safer, greener and more efficient photonic devices

This project aims at improving the efficiency and performance of photonic devices of our daily life such as LEDs (used in traffic lights for instance), solar cells (energy storage) or CFLs (home illumination). At a time when the development of efficient energy sources becomes increasingly crucial, a safer and greener production of these devices is needed. Their current manufacturing process employs hazardous and rare materials, which could now be replaced, and therefore diminishing their impact on health and environment during production and end-of-life processes. To this end, novel smart materials - nano energy-conversion phosphors - will be coated on the respective device by a new technique relying on ionic liquids. As no new development of the devices themselves is required, the invention has a near-market potential.

*Researcher:* Anja Verena Mudring (Starting Grant 2007)

*Host Institution:* Ruhr-Universitaet Bochum (DE)

*Project title:* EMIL goes green - Exceptional Materials from Ionic Liquids for Energy Saving Applications in Photonics (BrightEMIL)

**Links:**

Research group [Website](#)

ERC Starting Grant project on Cordis: [EMIL](#)

### Impact of social anxieties about food on policies and businesses

The first phase of this ERC project aimed at explaining the extent to which consumers' anxieties shape all points of the contemporary food systems along the supply chain ("from the farm to the fork"). This includes taking various issues into account, from international food security, domestic food hygiene to public health. This proof of concept will go a step further in making recommendations on a wider range of topics, from quality and provenance of food, to innovations in food labelling, marketing and consumer practice. The project will test the market for these new ideas with a view to providing consultancy services to various groups (manufacturers, retailers, food service organisations and agencies) so that they are better equipped to interpret and respond to consumers' concerns about health and food safety when developing new products.

*Researcher:* Peter Jackson (Advanced Grant 2009)

*Host Institution:* University of Sheffield (UK)

*Project title:* Food Futures: Providing independent Research and Advice to Food Businesses and NGOs

**Links:**



Researcher's [page](#)  
ERC Advanced Grant project on Cordis: [CONANX](#)

[Full list of all selected Principal Investigators](#) by country of host institution (in alphabetical order within each country group)

### Note to the editors

The European Research Council launched the new funding initiative, the "**Proof of Concept**", in March 2011, to contribute to stimulating innovation. The total funding of the first ERC Proof of Concept call is €10 Mio and is foreseen to continue in 2012. The call is open to all Principal Investigators benefitting from an ongoing ERC grant or a grant that ended less than twelve months before the publication date of the call. The funding is for up to one year per grant.

Set up in 2007 by the EU, the **European Research Council** is the first pan-European funding organisation for frontier research. It aims to stimulate scientific excellence in Europe by encouraging competition for funding between the very best, creative researchers of any nationality and age. The ERC also strives to attract top researchers from anywhere in the world to come to Europe. The ERC two core funding schemes are the 'ERC Starting Grants' for younger, early-career top researchers and the 'ERC Advanced Grants' for senior research leaders. This year, two smaller initiatives were added, namely the 'ERC Proof of Concept' scheme for researchers already holding an ERC grant and the 'ERC Synergy scheme', targeting small groups of principal investigators working together on one project.

The ERC operates according to an "investigator-driven", or "bottom-up", approach, allowing researchers to identify new opportunities in any field of research. Since its launch, the ERC has funded over 2,200 frontier research projects throughout Europe and has become a "benchmark" of the competitiveness of national innovation systems as it complements existing funding schemes at national and European levels.

The ERC, which is the newest, pioneering component of the EU's Seventh Research Framework Programme, has a total budget of €7.5 billion from 2007 to 2013. It is led by the ERC Scientific Council, composed of 22 top scientists and scholars. The ERC President is Prof. Helga Nowotny. The Scientific Council's representative in Brussels is the Secretary General, Prof Donald Dingwell. The ERC Executive Agency implements the "Ideas" Specific Programme and is lead by Director (*ad. int.*) Pablo Amor.

### Links

[ERC Press Release on Proof of Concept](#) (March 2011)  
[ERC website](#)

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