# The European Marie Curie Programme

2007-2014

A major funding opportunity for
Industry R&D in Ireland


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# Industry Researchers explain all…..

**Fastnet Mussels**
Contract Value: €579,085
**Julie Maguire**
*Bivalves from farm to fork*

The objective of this project will be to develop an economically viable and environmentally sustainable genetic breeding programme for scallops in order to produce seed in a hatchery to supplement the inconsistent wild seed supply. With the increased demands for shellfish products due to their healthy image, improvements in food technology and product development are required. This project will integrate multi-disciplinary resources from bivalve hatchery production and on-growing to seafood processing by considering a "total food chain" approach on all research, training and technology transfer levels.

Even though we have an enormous amount of hands-on experience and numerous successes in research and development, our ability to further develop and integrate novel technologies was limited due to economic and time constraints. In addition we did not have the specific competency in the area of quantitative genetics and breeding programme design which will be acquired through the transfer of knowledge from the research fellows and through participation in the research process. Also, to our knowledge this was the only programme that would 100% fund such a transfer.

The group intend to facilitate a multi-disciplinary research programme through the recruitment of experienced researchers to develop an environmentally sustainable hatchery breeding programme in order to increase the growth rate and survivability of scallops using state-of-the-art hatchery and ongrowing techniques. This will provide the physical (genetically improved brood stock) and the intellectual (a specifically designed breeding programme) tools to enable the scallop sector to base its business on the most suitable, profitable stock. Stock with an improved growth and survival will have a significant impact on their profitability and on the further expansion of the sector. Also, this will be the first time that modern genetic selection techniques will be used to design a breeding programme for the scallop industry.

The direct benefits to the five partners will be the new multi-disciplinary competencies (marine and aquaculture biology, quantitative genetics, food science and technology, microbiology, food business and socio-economics) acquired through the transfer of knowledge. SME partners will acquire an understanding in experimental design, analytical techniques, statistical analysis, data interpretation and ethical issues and communication techniques. University/Research partners will understand the needs of the aquaculture and processing sectors from an industry perspective regarding socio-economics, national and EU food legislation, practical knowledge and various site specific husbandry practices.

Declining wild fish stocks are creating the need for efficient farmed production methods and improving aquaculture is a central theme of the new Common Fisheries Policy. Aquaculture has frequently created employment in financially depressed peripheral coastal regions where jobs historically have been lost due to mechanisation of agriculture and fisheries. Increased aquaculture and processing would secure employment in these areas where the economy is fragile.

**SIFCO**
Contract Value: €983,000
**Aidan Kennedy**
Development of Technologies for advanced treatment of metal alloy surfaces

SIFCO is a Cork based engineering company with about 100 employees. The company's business is concerned with the technology of gas turbine engines, in particular the repair, manufacture and coating of key components of these engines. It's a high technology business with customers constantly requiring

improvements - in particular improved protective coatings for turbine blades which are exposed to extreme conditions of thermal and mechanical stress while in service in these engines.

SIFCO needs to keep up with, or ahead of, the latest technological advances in order to retain its customers and to attract new customers. To this end we wished to develop strong links with outstanding centres of research expertise in surface coatings of advanced alloys. We applied to the Marie Curie/Transfer of Knowledge Programme to support our proposal to build industry/academia partnerships with 3 Universities - Cranfield University (England), the University of La Rochelle (France) and Trinity College Dublin. The project will involve the cross secondment of 12 researchers between SIFCO and the 3 University partners to carry out agreed, relevant research projects over a 4 year period.

We expect the project will have a very positive impact on the company by exposing key members of our engineering staff to the latest research developments in 3 Universities all of whom have well established international reputations in relevant technical fields, and also by infusing new thinking into the traditional "in house" processes and approaches to technology development within SIFCO.

The project will provide jobs and advanced training in applied research for 4 researchers who already have more than 4 years research experience. It will also provide technology transfer opportunities for 8 Senior Researchers from the 4 participant organisations. In the medium term it will help SIFCO to compete in a very competitive global market by enhancing the company's image as a developer of new technologies. In this way it will help to secure the continued employment of about 100 people in Cork.

**WWW.SIGMEDIA.TV**
Contract Value: €95,000
**Anil Kokaram**

Marie Curie funding was sought firstly because at the time there was not a great deal of local government funding for research. In addition, this programme does not require heavy reporting or prototype deliverables. The programme allows laboratories to concentrate on research and has a broad remit to encourage interchange of young researchers. This fit well with the objectives of a growing research group. The Transfer of Knowledge programme was attractive because it provided a simple mechanism to allow a closer connection to industry at the heart of our work area. Allowing recent doctoral graduates from Sigmedia to have work experience in a high profile company in the film industry, gives them the perfect start to their career and makes Sigmedia an attractive proposition for those looking to start research careers.

The Sigmedia Laboratory has successfully applied to the Marie Curie Programme since 2000. We have been funded through both the Research Training Network and Transfer of Knowledge Programme. Under the RTN scheme, the MOUMIR project (Models for Unified Multimedia Information Retrieval) investigated new ways of searching digital media content. The idea was to extract audio and visual features such as loudness, pitch, shape, colour and combine them to create summaries of content, or to allow users to query content in a way that they had never been able to before. Our publications and demonstrations can be seen at www.moumir.org. Sigmedia coordinated Moumir valued at €1.5million over 4 years between 2000 and 2004. One aspect of our work that led to good publicity in the New Scientist and RTE television was the automated creation of sports highlights.

Marie Curie funding fills a gap left by other forms of research funding in that research travel is encouraged and well financed in this programme. Through the Marie Curie programme, Sigmedia can provide a kick start to the industrial research careers of its graduates, is able to attend all the international conferences in film and video processing, and has been able to employ post-doctoral researchers regularly over the last 6 years.

The explosion in the availability and ease of generation of digital media has not been balanced by a similar increase in the ease with which that media is manipulated or accessed. Several of the latest blockbuster movies including Lord of the Rings, The Matrix, and The X-Men etc use technology heavily influenced by work in Sigmedia.

**Duolog Technologies Ltd.**
Contract Value: €1,149,703
**Michael Phelan**

Duolog is a semiconductor design, ESL Tool and wireless IP development company. Established in 1999 the company has grown to 115 employees with offices in Dublin Ireland, Galway Ireland and Budapest Hungary. A support center in India and a sales office in the US have also been set up. Duolog is made up of three divisions, a Wireless Division, an ESL Tools Division and a Semiconductor Design Division.

Duolog has invested 30% of its revenue in R&D in the wireless and ESL divisions. The Marie Curie project allowed Duolog increase its expertise and R&D capacity in the wireless division. It also allowed the company to build on existing 802.11/WLAN and 802.15.4/Wireless Sensor IP and bring in experts from across Europe.

New wireless technologies are emerging in the wireless LAN and wireless sensor areas. These are key technologies to enable wireless video distribution in the home, wireless home automation and energy management. Duolog is one of Europe's most innovative SMEs producing low power and low cost solutions in these wireless technology areas.

The Marie Curie project allowed Duolog source industry leading experts in the above areas to greatly strengthen its capability to develop products in the wireless LAN and wireless sensor areas. In particular the Marie curie project facilitated the recruitment of six additional research staff.

**Biosensia Ltd (formerly Nanocomms)**
Contract Value: €811,519
**Ian Muirhead**
Transfer of Knowledge Industry-Academia Partnership Scheme

There is a major growing societal problem with drugs of abuse driving, particularly in Europe, the USA and Australia. Drug driving is in many areas more prevalent than drink driving and it is now believed that drugs of abuse are a contributing factor in up to 25% of fatal road accidents. Governments worldwide are aware of this problem and are introducing legislation for road side testing for impairment under the influence of drugs. Detecting traces of the drug directly in oral fluid (saliva) has been identified as the best method of detection for roadside testing as it is easier to collect.

Biosensia Ltd has combined its expertise in polymer micro-fluidics and micro-optics systems with the development of drugs of abuse Molecular Imprinted Polymers (MIPs) at Cranfield University (UK) to produce a laboratory prototype of a hand-held instrument which uses disposable polymer chips containing MIPs to detect drugs of abuse to the ppb level in saliva. This is world leading scientific and engineering research in terms of MIPs performing in saliva and a world leading technological platform development in terms of MIPs in disposable point of use sensor technology.

Through the Marie Curie Transfer of Knowledge Industry-Academia Partnership, Biosensia Ltd will be able to accelerate further research and development of a range of drugs and drug metabolites that can be detected using the combination of micro-fluidic and MIP technology. The resultant product and technology platforms developed by this multidisciplinary project could have major health safety and societal benefits for Europe.

The resulting strategic partnership that the Marie Curie enables is not only synergistic and complementary but will be valuable and will contribute to breaking barriers between traditional industrial and academic sectors. The considerable transfer of staff can only lead to improved co-operation and mutual understanding between academia and industry. Winning the Marie Curie award has given our company a further seal of approval with customers, development partners and Venture Capitalists.

The European Marie Curie Programme has the objective of providing support for the career-development of researchers. The programme consists of a set of actions, geared at the development and transfer of research competencies, the consolidation and widening of researchers´ career prospects and the promotion of excellence in European research. It enables companies to build research capacity by hiring experienced R&D people from abroad. It also enables companies to forge alliances with universities and research centres, at home and abroad, exchanging staff and ideas.

Between 2002 and 2006, research income from the Marie Curie Programme amounted to an impressive €55m. Irish success is evident as the European average share of funding for this programme is 3.7% while for Ireland it is 19.2%. Of this total 18% has gone to Industry based in Ireland large and small. Contract values ranged from €300,000 to €1.7million for single companies.

From 2002-2006 Marie Curie income has supported companies to attract over 250 high quality researchers from around the world to Ireland.

From 2007 to 2014 €4.7bn will be available through the Marie Curie Programme to fund research in all areas of science and humanities.

## Success for Industry in Ireland

During this time, Industry researchers have participated in increasing numbers and with significant success in the Marie Curie Programme.

Funding from Europe is considered by many to be bureaucratic and onerous with little return from high input and it only funds 50% of the project. The Marie Curie programme is the exception in that the European Commission pays 100% of staff costs plus a generous allowance for research and managerial costs.

Companies which were funded under the Marie Curie Programme include:

- AquaTT
- Aughinish Alumina
- Cellix
- Celtic Catalyst
- Deerac Fluidics
- Duolog Technologies
- EiRx Therapeutics
- Ericsson
- Fastnet Mussels
- Biosensia Ltd
- nTera
- SIFCO
- Sigmoid Biotechnologies
- Slidepass

The **Irish Marie Curie Office** at the IUA is the National Contact Point for the Marie Curie Programme in Ireland.

The office provides advice and support to researchers, research active organisations and companies in submitting their proposals and in managing their Marie Curie Projects.

**KEY CONTACTS**

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For further information on upcoming workshops log on to the IUA website: www.iua.ie/marie_curie/index.html

**EURAXESS Ireland**, the Researcher's Mobility Portal Ireland, at IUA is a dedicated support and advisory office for researchers, research active organisations and industry. euraxess.ie offers practical advice and information on visas, work permits, job opportunities and much more.

Companies can advertise their R&D vacancies on this portal and identify suitable candidates according to their recruitment requirements.

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