3 Dimensional Light sEnsing for Advanced Portable Devices

This proposal aims to develop 3 Dimensional Mini-cameras (producing 3D-Images) for mobile phones, tablets and laptop computers; more specifically embedded camera modules providing 2D and 3D-Images, integrating sensing electronics and optics in a single lens Wafer Level Camera (WLC).
This market creating innovative device is aiming towards disruptive market-share and global leadership in 3D-imaging camera modules, to accelerate our growth, profitability and Europe´s competitive position in smart cameras for 3D-imaging. We introduce a paradigm changer by applying new sets of rules in one of the highest growth areas addressable in consumer technologies and, we will set entry barriers that are difficult to overcome for current and new market players; we will hit the market while established competitors will still be trying to figure out our algorithms, our IPR and our hardware/software solution.
Our most disruptive competitive advantage is based on our algorithms. These exploit a novel hardware structure described in detail in the proposal. In short, we build micro-lenses on top of a semiconductor substrate containing image sensors or pixels with several color filters.
3D has captured the public imagination through Hollywood mega productions (like James Cameron´s Avatar). It has reached modest market penetration in different segments including movie productions, household 3D-TVs and cameras with two lenses. The hurdle to mass market adoption of the technology is the lack of consistent quality 3D content. The paradigm shift that our market creating innovative 3D camera module enables is that it meets the need for much higher quality content production at a lower cost, and will enable the creation of high-quality consumer-owned 3D-content on mobile platforms. Today, 3D content creation is the privilege of a small number of professional movie makers.

Project Acronym:
3D-LEAP (Phase 2)
Eu Contribution:
3.571.425
Call Id:
H2020-SMEINST-2-2015
Beneficiary:
PHOTONIC SENSORS AND ALGORITHMS

Clinical validation of the DiviTum assay in two high profile clinical studies in Europe

The traditionally practiced approach to cancer therapy and development of new cancer drugs is to treat a large pool of patients as potential responders. This results in patients not receiving the optimal treatment; payers paying for treatments that do not benefit patients; drug developers facing higher risk of regulatory failure due to not being able to use better tools for selection of patients in the clinical development program; and clinicians lacking predictive and monitoring tools to administer optimal treatment of patients. Our company has developed a state-of-the-art assay kit - DiviTum™, for the serum-based detection of Thymidine Kinase (TK) activity – a key enzyme involved in cell proliferation. There is compelling scientific rationale to use TK as a biomarker for drugs that disrupt cell cycle regulation, such as Cyclin Dependent Kinase (CDK) inhibitors. As part of the previously conducted SME Instrument Phase 1 feasibility study, our company has identified the clinical study & research market segment, comprised of pharma companies that develop CDK inhibitors, as a current target for the commercialization of DiviTum™. Our company has successfully negotiated to be part of two high-profile clinical studies involving a novel CDK inhibitor with leading oncology institutes in Europe. A clinically validated DiviTum™ has the potential to become the gold standard predictive and efficacy biomarker for cell cycle regulating drugs in selected advanced, solid tumors. This will benefit patients through improved utilization of current and novel treatments; payers by saving costs on ineffective treatments; clinicians by providing a critical clinical decision tool; and drug developers by improving clinical trial success rates through optimized cohort selection, shorter time to market and decreased risk of regulatory failure.

Project Acronym:
BIOVALID
Eu Contribution:
682.506
Call Id:
H2020-SMEINST-2-2015
Beneficiary:
BIOVICA

Graphene Oxide for advanced polymers APPlication

GO4APP goal is to create added value through the introduction of high performing additives at a competitive costs, accelerating innovation for the advanced polymer industry and eventually creating a new product category that will meet consumer and industrial needs. This new area of development will make it possible for the European industry to harness this market high potential, fostering competitiveness and creating growth throughout the EU.
GRAPHENEA proposes this Phase 2 project after the successful realization of the Phase 1 Business Innovation Plan, in order to take the Graphene Oxide (GO) a step closer to the market through specific polymer applications. This project will allow GRAPHENEA to become the worldwide leader as GO producer with the necessary production capacity to supply the polymer industry and the research laboratories.
More specifically, the GO4APP objectives are:

- Large-scale production of GO to enter/supply the advanced polymers industry.
- Reducing dramatically GO cost, increasing the production scale and supporting applications development.
- Producing tailor made GO materials to improve compatibility with different matrices, leading to a broad range of applications.
- Improving the mechanical, electrical and thermal properties of advanced polymers.
- Creating a cost-competitive final advanced polymer composites new market category using GO additives.

GRAPHENEA has validated and patented a highly efficient GO production process and its application into polymeric matrices. GRAPHENEA will be able to introduce GO materials at industrial scale positively impacting the €48 billions polymer additives market. GRAPHENEA will become the worldwide leader in GO additives for polymer applications generating at least € 21 M in 2022, in incremental revenues, +50 jobs creation and the largest market share +35%.

Project Acronym:
GO4APP (Phase 2)
Eu Contribution:
1.577.013
Call Id:
H2020-SMEINST-2-2015
Beneficiary:
Graphenea

INnovative laser machine For INdustrial engravIng and 3d TExturing

Created 15 years ago, the innovative Italian company ML Engraving SRL is one of the leaders in laser engraving and texturing on moulds/dies and parts for automotive and consumer goods industries in one of the most industrialised regions in Europe, Lombardia. ML Engraving is also part of the partner´s alliance “Cactooos, The Engraving Network”, which gathers the best companies – ML Engraving, DS4 and 2 other Italian SMEs (Jockoo and NovaTex) – specialized in services connected to the creation and engraving and texturing on moulds.
With INFINITE project, they are developing an innovative laser machine for high precision engraving and 3D surface texturing, fully adapted to these industries in terms of design requirements, productivity, repeatability, easy operability & price. This new technology will allow ML Engraving to consolidate its position in the laser engraving/texturing services (+32% services in 5 years) while extending its business – in partnership with DS4 – as laser machine supplier for these markets and other production lines industries in Europe and Worldwide (€25 million accumulated sales for 2017-2021).

Project Acronym:
INFINITE (Phase 2)
Eu Contribution:
1.282.794
Project Duration:
Friday, 10 January, 2014 to Friday, 2 January, 2015
Call Id:
H2020-SMEINST-2-2015
Beneficiary:
ML ENGRAVING SRL
DS4

PNEUMOSIP

PneumoSIP project aims to be the first fully automated device in the POC market for the fast quantitative aetiological diagnose of Community-Acquired Pneumonia (CAP) also analysing antibiotic resistances to enable the most appropriate treatment for each infected patient.
CAP is known to affect about 1/1,000 of the adult population per year, being even higher in the elderly and children populations. It is the fourth case of death in the world, and the leading cause of death in child population under 5 years old. The causal relationship between pathogens and pneumonia has been clearly established, being Streptococcus pneumoniae, Haemophilus influenzae type b (Hib) and the respiratory syncytial virus (RSV) the main pathogens responsible for CAP in Europe. Antibiotic therapy is the mainstream treatment for CAP, and the appropriate treatment involves starting empiric antibiotics administration within 8 hours of hospital arrival. Given this time constrain, traditional methods for diagnosing the aetiology of CAP have been discarded for CAP guidelines due to the slowness in sample to results. Another complication is that S. pneumoniae is a common colonizer of the nasopharynx (up to 70% of healthy population acts as a host), making the simple detection of the bacteria a useless diagnostic method. Thus, clinicians need rapid and accurate quantitative tests capable of identifying infectious agents and their potential antibiotic resistances.
Therefore, PneumoSIP project aims to be a compact Respiratory Infectious Diseases diagnostic device providing fast quantitative identification of pathogens involved in CAP, enabling faster and more specific treatments. PneumoSIP seeks to combine laboratory standard precision with the simplicity required for POC applications.
The market for PneumoSIP system is the POC market, concretely the Infectious Disease POC testing segment. The POCT segment was valued at $415.4 million in 2012 where Pneumosip will greatly impact.

Project Acronym:
PNEUMOSIP (Phase 2)
Eu Contribution:
3.389.913
Call Id:
H2020-SMEINST-2-2015
Beneficiary:
ALPHASIP

Scaling of midsized, patented, low energy, light weight, highly efficient actuator to meet the demands of smaller and larger scale applications

Buiding on our highly successful SME Instument Phase 1 Project, The Smart Actuator Company Ltd develops smart, RIFT Driven® actuators. Our first was delivered to market in Q3-2013.
The system is proven to use 25% less copper, be 80% lighter and 75% more energy efficient than our competitors. Early success means that the first two years production scheduling is already sold to 90% capacity and The Smart Actuator Company now own global rights for the use of RIFT Technology in electrically powered actuators.
Put simply, we believe our technology is a game changing product capable of delivering benefits worldwide by dramatically reducing;

- energy required to automate everyday tasks in many applications
- volume of raw materials, including copper and magnets, used to manufacture automated systems
- inventory and therefore administration complexity
- weight, thereby reducing fuel use in logistics and shipping
- Carbon Footprint in manufacturing and distribution
- need for sourcing manufacturing capability outside Europe

Project Acronym:
SmartAct-2-3
Eu Contribution:
2.287.620
Call Id:
H2020-SMEINST-2-2015
Beneficiary:
THE SMART ACTUATOR COMPANY

ENZYMATIC SO2 BIOSENSOR FOR RAPID FOOD SAFETY MONITORING

Sulphites are food additives that have antioxidant and preservative properties, but are recorded as allergens by the main international regulatory bodies on food safety because of their adverse health effects. Hence, sulphites maximum concentration levels in foodstuff are regulated, and must be ensured by the agro-food processing industries. BIOLAN has developed at the laboratory scale a simple, reliable and specific enzymatic biosensor for sulphite determination and has obtained relevant data that support the innovative project here proposed.
Main objective of SO2SAFE project is to develop a novel miniaturized ready to use biosensor based on disposable screen printed electrodes for determination of sulphites in crustaceans, since this is a type of food where the sulphite is broadly used. The novel solution will have a direct impact not only in the food industry economy, but also in the society due to the direct impact the sulphite has in health. Therefore, SO2SAFE project will also contribute to one of the societal challenges set by the European Commission, food safety and consumer health.
Specific objectives will be:
• To develop further the biosensor prototype to achieve a new miniaturized ready to use biosensor enabling a highly sensitive, selective, fast and user friendly method for determination of sulphites in crustaceans
• To demonstrate the SO2SAFE miniaturized biosensor improved performance by relevant stakeholders
• To scale-up the biosensor manufacturing process to optimize production cost and increase production capacity
SO2SAFE biosensor solution is targeted to all agro-food industries where sulphites are used as additives at different steps of the supply chain. Current methods and tools widely used for sulphite level monitoring in the agro-food industry and in the crustacean industry, are not solving the problem of the high quality control standards required to comply with new regulation on food safety and consumer health protection.

Project Acronym:
SO2SAFE (Phase 2)
Eu Contribution:
743.565
Project Duration:
Friday, 10 January, 2014 to Saturday, 3 January, 2015
Call Id:
H2020-SMEINST-2-2015
Beneficiary:
BIOLAN