Smart optical and ultrasound diagnostics of breast cancer

Fact Sheet

Project Information

**SOLUS**
Grant agreement ID: 731877
Project website

**SOLUS**
Grant agreement ID: 731877
Project website

**Project website**

**Status**
Ongoing project

**Start date**
1 November 2016

**End date**
31 October 2021

**Funded under**
H2020-EU.2.1.1.

**Overall budget**
€ 3 815 260

**EU contribution**
€ 3 815 260

**Coordinated by**
POLITECNICO DI MILANO
Italy

Objective

SOLUS is a trans-disciplinary 54-month project bringing together 9 partners: industries (4), academic and clinical institutions from 5 countries (engineers, physicists and radiologists) representing cutting-edge expertise in their fields, to develop an innovative non-invasive, point-of-care, low-cost, easy-to-operate, multi-modal imaging system (diffuse optics and ultrasounds/shear wave elastography) for high-specificity diagnosis of breast cancer, the most common female cancer in Europe. Mammographic screening is effective in reducing mortality, however the 10-year cumulative false-positive risk is 50-60%, leading to needless additional invasive procedures (e.g. biopsy). The project addresses the unmet clinical need for higher specificity in breast cancer imaging following screening by fully combining photonics with non-photonics techniques, developing and clinically validating innovative and previously unthinkable photonics concepts and components: time-domain small source-detector distance optical tomography, miniaturized picosecond pulsed laser

1 of 5
sources, high-dynamic-range time-gated single-photons detectors to achieve unprecedented sensitivity and depth penetration. For the first time, this allows a comprehensive quantitative characterization of breast tissue including composition (water, lipids, collagen), functional blood parameters, morphologic information and mechanical parameters (stiffness). This innovative multi-parametric characterization will significantly improve the specificity of breast screening, with great impact on the quality of life of millions of European women every year, and huge savings for the healthcare systems. The strong involvement of leading industrial players at all levels in the value chain will push the European innovation process and make a significant contribution to ensuring Europe’s industrial leadership in the biophotonics healthcare market, while addressing one of the largest societal challenges in health and well-being.

Field of science

/natural sciences/computer and information sciences/software/system software
/social sciences/sociology/demography/mortality
/natural sciences/physical sciences/optics/laser physics/pulsed lasers
/engineering and technology/medical engineering/diagnostic imaging
/natural sciences/computer and information sciences/internet/internet of things
/medical and health sciences/clinical medicine/cancer/breast cancer
/natural sciences/physical sciences/acoustics/ultrasound
/natural sciences/physical sciences/nuclear physics

Programme(s)

Topic(s)

Call for proposal

H2020-ICT-2016-1

Funding Scheme

RIA - Research and Innovation action

Coordinator

POLITECNICO DI MILANO
<table>
<thead>
<tr>
<th>Address</th>
<th>Activity type</th>
<th>EU contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piazza Leonardo Da Vinci 32 20133 Milano</td>
<td>Higher or Secondary Education Establishments</td>
<td>€ 726 988,75</td>
</tr>
<tr>
<td><a href="#">Website</a></td>
<td><a href="#">Contact the organisation</a></td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>Activity type</td>
<td>EU contribution</td>
</tr>
<tr>
<td>Rue Leblanc 25 75015 Paris 15</td>
<td>Research Organisations</td>
<td>€ 518 783,75</td>
</tr>
<tr>
<td><a href="#">Website</a></td>
<td><a href="#">Contact the organisation</a></td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>Activity type</td>
<td>EU contribution</td>
</tr>
<tr>
<td>510 Rue Rene Descartes Les Jardins De La Duranne B Et Bat F 13857 Aix En Provence</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
<td>€ 407 500</td>
</tr>
<tr>
<td><a href="#">Contact the organisation</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>Activity type</td>
<td>EU contribution</td>
</tr>
<tr>
<td>Rue General Renault 180 37000 Tours</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
<td>€ 555 312,50</td>
</tr>
<tr>
<td><a href="#">Website</a></td>
<td><a href="#">Contact the organisation</a></td>
<td></td>
</tr>
</tbody>
</table>
UNIVERSITY COLLEGE LONDON
United Kingdom
EU contribution
€ 300 213,75
Address
Gower Street
WC1E 6BT London
Activity type
Higher or Secondary Education Establishments
Contact the organisation

MICRO PHOTON DEVICES SRL
Italy
EU contribution
€ 400 711,25
Address
Via Waltraud Gebert Deeg 3/F
39100 Bolzano
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Contact the organisation

OSPEDALE SAN RAFFAELE SRL
Italy
EU contribution
€ 212 500
Address
Via Olgettina 60
20132 Milano
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Website
Contact the organisation

EIBIR GEMEINNUTZIGE GMBH ZUR FORDERUNG DER ERFORSCHUNG DER BIOMEDIZINISCHEN BILDGEBUNG
Austria
EU contribution
€ 366 250
Address
Am Gestade 1
1010 Wien
Activity type
Research Organisations
IC-HAUS GMBH

Germany

EU contribution

€ 327 000

Address

Am Kuemmerling 18
55294 Bodenheim

Activity type

Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Permalink: https://cordis.europa.eu/project/id/731877

© European Union, 2021