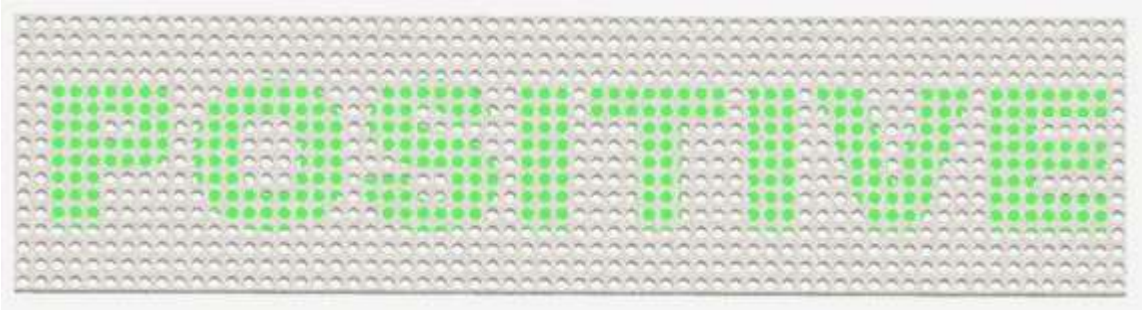

**Project Number: 257401**

# A highly integrated and sensitive POrous SIlicon based lab on a chip for multiple quantitaTIVE monitoring of food allergies at point of care.

Specific Targeted Research Project

Information Society Technologies

## Deliverable D11.11: End of year 2 version of plan for use and dissemination of foreground – Section A (Public)

Due date of deliverable: **August 31 2012**

Actual submission date: **November 8 2012**

Start date of project: 2010-09-01 Duration: 3 Years

Organisation name of lead contractor for this deliverable: **UVEG**

Revision **[1.0]**

| **Project co-funded by the European Commission within the Seventh Framework Programme** | | |
|---|---|---|
| **Dissemination Level** | | |
| **PU** | Public | X |
| **PP** | Restricted to other programme participants (including the Commission Services) | |
| **RE** | Restricted to a group specified by the consortium (including the Commission Services) | |
| **CO** | Confidential, only for members of the consortium (including the Commission Services) | |

# 1 About this deliverable

## 1.1 Introduction

This report describes the end of year 2 version of a roadmap for the use and spread of the knowledge generated during the project lifetime. The plan includes, amongst others, plans for disseminating scientific and technological information and identifies a priori potential users' forum. Its submission was delayed until bio-sensing results were made available.

This plan will be implemented and commented upon throughout the project lifetime, with the final plan coming in D11.15 (M36).

Dissemination of project results will be carried out by consortium members. This includes participation in workshops, conferences, EC related events, standardisation bodies, etc. Positive members will participate and share information and resources with on-going R&D activities or entities, such as NoEs, IPs or any other horizontal network.

The plan should consist of:

Section A: describing the dissemination measures, including any scientific publications relating to foreground. **Its content can be made available in the public domain** thus demonstrating the added-value and positive impact of the project on the European Community.

Section B: This section specifies the exploitable foreground and provides the plans for exploitation. **This section must be kept confidential** and must be treated as such by the Commission.

## 1.2 Scope of the deliverable

The deliverable outlines an initial roadmap for the use and spread of the knowledge generated during the project lifetime.

## 1.3 Structure of this deliverable

The report is laid out according to the tasks defined in WP11 as follows:

T11.3: Elaboration of roadmap for use and dissemination of foreground. (UVEG)

# 2 Section A – Dissemination (for public knowledge)

This section includes a list of planned dissemination activities (publications, conferences, workshops, web, press releases, flyers, etc) in free text format. In addition, a list of scientific (peer reviewed) publications is provided.

## 2.1 Setup of Positive web-site

At the start of the project an interactive webpage, www.fp7positive.eu, was designed and published to allow world-wide knowledge of the activities and results of the project as well as co-ordination between partners (file exchange, etc) by M3 (Deliverable D11.1). Following a request from the EC for a major revision extensive resources were placed into improving its style and content meriting the comment from the EC in the intermediate review: “The website has been greatly improved and is more attractive and informative that the previous version”.

## 2.2 Creation of promotional material

During the project we aim to publicize the project and its results through the creation and distribution of promotional material available for broader distribution at key events and through a newsletter to a regularly updated database of contacts (= the INTEREST GROUP, see section 2.4.2).

A first set of promotional material was created by M3 (Deliverable D11.2), was updated in M12 (D11.7) and further so in M27 (D11.12). A final update will follow in M36 (D11.14) and M36 (D11.17). The promotional material consists of a project leaflet/flyer, a poster, a short presentation and a newsletter. UVEG leads this work, with active assistance of all partners.

### 2.2.1 Project leaflet

A first leaflet was created and printed by M3 containing 4 A5 sides with general information about the project, its objectives and its partners. Changes in the second leaflet (M14) reflected the new project coordinator and some minor style changes, 500 copies were professionally printed. They were distributed at various dissemination events: Student Open Days, MNBS 2012, ICT Proposers day. The third flyer (M27) includes highlights of technical achievements to date in the project. The leaflets are available for download via the Positive website.

### 2.2.2 Poster

A first poster was created, printed and used by the partners as of M3. The first poster contained general information about the project, its objectives and its partners. Posters generated since have contained more and more technical results as they have become available within the project. These posters were presented between M13 and M24 in Medica 2011, Nanotech Italy 2011, CNR and KTH open days, Expociencia 2012, Europtrode 2012 and Euromediag Convention.

### 2.2.3 A short presentation

Updated standard presentation material is kept available for all partners on the basis for incorporation into more detailed presentations or for use ad hoc at opportunities where the partners can present their on-going work. The standard presentation was incorporated into oral presentations at Photonics West, PSST 2012, SSI-2012, Fotonica 2012, MNBS 2012 and a CFBI organised meeting for Microfluidics Group.

### 2.2.4 A newsletter

An annual newsletter was created and distributed to the INTEREST GROUP (including the Europrevall, Ga2LEN and SMARTHEALTH consortia) in months M4 and M14. As well as a general introduction the latter (attached) contained achievements of Year 1, UNITN and their porous silicon membrane development. In M27 the 3rd newsletter was sent to the INTEREST GROUP highlighting technical achievements from Y2. The final newsletter is to follow in M36 (see also section 2.4.2.) focusing on key findings that are suitable for distribution.

## 2.3 Dissemination among other FP7 RTD projects

The consortium participants will disseminate to and cooperate with other FP7 RTD projects where possible. Contacts have been made and weblinks (http://www.fp7positive.eu/projects.html) are provided to the projects Europrevall, Ga2Len and Nanospad.

The consortium participants are cooperating with other FP7 RTD projects in the area of microsystems and photonics and will exchange non-confidential information with these projects particularly through the participation in periodic concertation meetings. This information exchange will occur in conjunction of meeting forums, such as concertation meetings, organized by the EU.

**Table: Dissemination events to other FP7 RTD projects**

| Date | Event | Responsible Positive partner |
|---|---|---|
| Newsletter 2 | The Europrevall, Ga2LEN and Nanospad consortia | UVEG |
| Feb 28th 2012 | CFBI organized meeting for Microfluidics Group | UVEG |
| May 2012 | MNBS Concertation meeting | UVEG |
| April 2011 | Interchange with FP7 FoodMicrosystems project | UVEG |
| May 2012 | EC MNBS Concertation meeting | UVEG |
| September 2012 | ICT Proposers Day | UVEG |

## 2.4 General publicity of the project

Further publicity will take place through the *dissemination of Positive research results to the non-scientific/technical media at large* (eg. newspapers, magazines, TV, periodicals) and raising of public awareness for the project and interest in photonic technologies at "student days", "open days", "girls days".

### 2.4.1 Press releases

Whenever a good opportunity presents itself, Positive will disseminate its results via the larger press. These opportunities will either be pursued actively, e.g. when critical results are being obtained, or will occur on an ad-hoc basis when the partners are contacted by the press in conjunction with the general research activities.

**Table: planned press releases.**

| Date | Press release content | Responsible Positive partner |
|---|---|---|
| M4 - 12 | The five seen in D11.6 | Various |
| M21 | None for M13-M18 | UVEG |

| | | |
|---|---|---|
| M27 | A press-release in M27 highlights the major technical achievements since the project began. | UVEG |
| M36 | Upon reaching M36 a press release announcing innovation developed within the whole project will be issued. | UVEG |

Following the 14 follow ups in Y1 to the press-releases of Y1, the Y1 press-releases were picked up by sources around the world in Y2, including:

- A contact from communication consultant for Parliament Magazine's Research Review.
- A recent contact from a representative of Europes Leading Scientific Dissemination Portal – Research Media Ltd.

### 2.4.2 The user forum

Positive identified an INTEREST GROUP to which promotional material was distributed at M4, M14 and M27 in the form of annual newsletters (a final one is to follow in M36). The INTEREST GROUP is basically an email list that contains key players and experts from Industry (most of them from European companies), governmental agencies and academia. The INTEREST GROUP currently consists of >150 entities. The first newsletter was distributed to this group at M4, the second in M14 and the third in M27.

### 2.4.3 "Student days" and "Open days"

All partners were to identify a suitable event close to the M24 date in which they will disseminate the Positive project and its results to the broader public. Due to the lack of opportunities it was decided to hold events as and when they became available at each partner.

**Table: Public events targeted for Positive dissemination**

| Date | Event | Responsible Positive partner |
|---|---|---|
| M20 | Positive open day at KTH in connection with the bi-annual Course Fair for the students | KTH |
| M21 | Expociencia 2012 | UVEG |
| Planned | To be defined | Farfield |
| Planned | To be defined | Phylogene |
| M19 | Positive Students day | CNR |
| M7 | Open day at Univ. of Trento. NL group disseminated POSITIVE related activities to undergraduate students that will visit the Nanoscience research group laboratories | UNITN |
| M18 | Public dissemination event "Realizzazione di un sensore point-of-care in silicio poroso per analisi quantitative delle allergie alimentari", 10 February 2012, City Hall of Levico Terme (Italy). | UNITN |
| M15 | Nationaler Zukunftstag 2011, open day for students to visit CSEM's facilities in Alpnach | CSEM |
| M18 | Information day at CSEM for Executive MBA course from HSLU | CSEM |
| Planned | To be defined | C-UB |

### 2.4.4 Other dissemination events

**Table: Other dissemination events**

| Date | Event | Responsible Positive partner |
|---|---|---|
| M13 | Swedish Medical Technology Days | KTH |
| M14 | Medica 2011 | Phylogene |
| M14 | NanoTech Italy 2011 | UVEG |
| M18 | CFBI organised meeting for Microfluidics Group | UVEG via Ikerlan |
| M19 | European Lab-on-a-Chip Congress | KTH |
| M19 | Swedish MEMS conference (http://www.msw2012.org/), | KTH |
| M21 | MNBS | UVEG/UNITN |
| M21 | Euromediag Convention | Phylogene |
| M25 | ICT Proposers Day | UVEG |
| M25 | Information on optical packaging technology for MCCS (Micro Center Central Switzerland, organization with 17 shareholders) | CSEM |
| M25 | Cowin Market Place, Paris 2012 | CSEM |

## 2.5 Communications to scientific journals and conferences/workshops

The project research results obtained will be either protected by patenting and/or published at international conferences, EU-workshops and refereed journals, such that dissemination activities to the scientific community and the European Diagnostics industry as follows:

- Publications in leading scientific and technical journals in the field
- Publications in leading international conferences.
- International exhibitions (usually co-located in major conferences).
- Concertation meetings and topical clusters.

### 2.5.1 Conference communications

- ***Poster presented*** *at* ***MicroTAS2011****, "Low temperature "click" wafer bonding of off-stoichiometry thiol-ene(oste) polymers to silicon" - KTH*
- ***Poster presented*** *at* ***MicroTAS2011****, "Biostickers: patterned microfluidic stickers for rapid integration with microarrays" - KTH and CNR*
- ***Oral presentation*** *at* ***SPIE Photonics West****, "Highly-Sensitive Anisotropic Porous Silicon based Optical Sensors " - UVEG and UNITN*
- **Oral presentation** at ***Fotonica2012*** "n-Type Porous Silicon Optical Micro-Cavity"- UNITN
- ***Poster presented*** *at* ***Europtrode****, "Mesoporous silicon for phase sensitive biosensing" - UVEG*
- ***Oral presentation*** *at* ***PSST, "****Optimization and synthesis of thin transparent free standing n-type porous silicon membranes" - UNITN.*
- ***Poster presented*** *at* ***MEMs 2012****, "Dry transfer bonding of porous silicon membranes to OSTE(+) polymer microfluidic devices" - UNITN and KTH*
- ***Oral presentation*** *at* ***SSI-2012****, "Photonic sensing of food allergens: integration and miniaturization" - CSEM*
- **Oral presentation** at IEEE Sensors 2012 "A polarimetric sensor based on nanoporous membranes", UNITN and UVEG
- **Abstract submitted** to **SPIE Microtechnologies 2013**, "Real-time polarimetric biosensing using macroporous alumina membranes" – UVEG, CNR, Farfield

### 2.5.2 Peer reviewed scientific publications

| LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS, STARTING WITH THE MOST IMPORTANT ONES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Title | Main author | Title of the periodical or the series | Number, date or frequency | Publisher | Place of publication | Year of publication | Relevant pages |
| 1 | Simulation of Surface-Modified Porous Silicon Photonic Crystals for biosensing applications | Issac Suarez (UVEG) | Photonics and Nanostructures - Fundamentals and Applications | V10 | ELSEVIER | Amsterdam | 2011 | 304-311, Doi:10.1016/j.photonics.2011.04.014 |
| 2 | Birefringent Porous Silicon Membranes for Optical Sensing | Jesús Álvarez (UVEG) | Optics Express | V9, I27 | OSA | Washington | 2011 | 26106- 26116, Doi: 10.1364/OE.19.026106 |
| 3 | Advances in nanophotonic sensing technologies during three international Label Free Lab-on-Chip projects | Daniel Hill (UVEG) | Journal of BioNanoScience | V1, I4 | ASP | Valencia, California | 2011 | 162-172, Doi: 10.1007/s12668-011-0026-1 |
| 4 | Phase sensitive detection for optical sensing with porous silicon | Jesús Álvarez (UVEG) | IEEE Photonics | V4 I3 | IEEE | New Jersey | 2012 | 986-995, 10.1109/JPHOT.2012.2201461 |
| 5 | Biocompatible 'Click' Wafer Bonding for Microfluidic Devices | Farizah Saharil (KTH) | Lab on Chip | V12 | RSC | London | 2012 | 3032-3035, 10.1039/C2LC21098C |
| 6 | Dry adhesive bonding of nanoporous inorganic membranes to microfluidic devices using the OSTE(+) dual-cure polymer | Farizah Saharil (KTH) | Journal of Micromechanics and Microengineering | Submitted | IOP | London | NA | NA |
| 7 | High quality free-standing double layer for layer transfer process onmedium doped n-type silicon | Neeraj Kumar (UNITN) | Electrochimica Acta, | Submitted | ELSEVIER | Amsterdam | NA | NA |

## 2.6 Internal dissemination

Since there will be a common knowledge basis on the critical issues, in order to greatly facilitate the final device integration the distribution of interdisciplinary knowledge will be encouraged. This will be done by taking advantage of the possibilities for internal dissemination such as introductory sessions for new PhD students and postdocs from the consortium partners at meetings and permitting short stays at one or two other partners. Most of the partners are already involved in EU networks of excellence where exchanges of students and postdocs take place. Furthermore, results will be used in educational activities such as courses, M.Sc. and Ph.D. projects. Previous participation in EU-projects has clearly shown that such participation enhances the quality of the educated candidates to world-class level.

Specifically we are planning a series of 60-90 minute lectures to be held at each consortium meetings. The lectures will contain a basic introduction in each of the many scientific and technical fields addressed within Positive. The target audience will be the Positive partners themselves AND interested researchers at the site of the meeting.

**Table: Positive internal lectures (typ. 60 - 90 minutes)**

| Date | Lecture title | Positive partners |
|---|---|---|
| 13/09/10 | Food allergies and currently available diagnostic tests | Kirsten Beyer, C-UB |
| 2/12/10 | Porous Silicon: From fundamentals to applications | Paolo Bettotti, UNITN |
| 24/3/11 | Photonic and plasmonic materials and their applications | Juan Martinez Pastor, UVEG |
| 22/3/12 | Integration of Materials and functions in microfluidic devices. | CNR |
| Planned | To be defined | Farfield |
| Planned | To be defined | CSEM |
| 20/6/11 | OSTE in microfluidics | Tommy Haraldsson, KTH |
| Planned | To be defined | Phylogene |

## 2.7 Contributions to standards

Throughout the project where necessary the consortium will contribute to national and/or international standards.

## 2.8 Contribution to policy developments

In the eventuality that the project would have significant impacts on research or research-based policy development at regional, national or European level such details and policy process shall be detailed in the dissemination section of the periodic reports.

The project manager channels any technical achievements which would have a significant impact on the Integrated Research and Industrial Roadmap for European Nanotechnology through the Nanofutures key node group of Design, Modelling and Testing of Materials in which he actively participates.

## 2.9 Risk assessment and related communication strategy

Any potential risks (real or perceived) for society/citizens associated with the project and the communication strategy adopted in this regard will be identified during the project and communicated to the corresponding group through the appropriate means.

# 3 Conclusions

Dissemination of public knowledge has been outlined and will be later updated at M36.

# 4 Near future planning/Future work

Dissemination of public knowledge will continue and the EC updated on this at M36.

# 5 Bibliography

None