D2.2 Intermediate Report on Dissemination & Communication

Date: 28-02-2019

Smart in-line metrology and control for boosting the yield and quality of high-volume manufacturing of Organic Electronics (SmartLine)
Grand Agreement: 768707

Project co-funded by the European Commission within Horizon 2020 Research and Innovation Programme		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Service	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (excluding the Commission Services)	

Horizon 2020
European Union funding
for Research & Innovation

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under the Call H2020 FOF-08-2017

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Consisting of Coordinator:	Aristotle University of Thessaloniki (AUTh)	Greece
Partners:	Centro Ricerche FIAT SCPA (CRF)	Italy
	Aixtron SE (AIXTRON)	Germany
	Suragus GmbH (SUR)	Germany
	IBS Precision Engineering BV (IBS)	The Netherlands
	Organic Electronic Technologies Private Company IKE (OET)	Greece
	Laytec Aktiengesellschaft (LayTec)	Germany

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1. Introduction

The SmartLine Project is set out to create intelligent and zero-defect manufacturing processes by developing robust and non-destructive in-line metrology tools (optical, electrical, structural) and a process control platform to achieve the reliable and closed-loop manufacturing of Organic Electronic devices (OPVs and OLEDs for lighting) by R2R printing and OVPD pilot lines.

The SmartLine tools, methodologies and platform will boost the manufacturing yield for OPV and OLED devices by achieving unprecedented homogeneity in nanolayer thickness, optical, electrical and structural properties, optimum resource utilization, minimization of process waste, and predictive/preventive corrections on the entire process.

This project will have a huge impact and will transform the manufacturing processes for Organic Electronics Industry and for other Industries as Thin Films (e.g. functional films, antimicrobial coatings, barrier thin films), Electronics, Wearables, Energy, Automotive, Transport, Space, Health, etc., and incorporate them towards the Factory of the Future.

During the course of the project, the project partners have given significant attention to the dissemination of project results and to the increase of the visibility of the project to academic, research, and most importantly, to the industrial stakeholders, in regional, national, European and global levels. The dissemination and communication of the project results has been pursued through the realization of presentations in international events, submission of publications, and connections with European networks, clusters and associations to establish communication channels. Furthermore, the SmartLine partners were involved in the organization of international conferences and workshops, such as the NANOTEXNOLOGY event, and the 9th Workshop – Flexible & Printed Electronics Industry: Targeting the Digital Transformation that took place in Athens in October 2018.

In the following, we provide an overview of the project dissemination activities during the first 18 months of the project.

2. Dissemination Strategy

2.1. Tools for Dissemination and Communication

The achievement of the SmartLine impacts and the visibility of its innovations beyond the project consortium will be realized through an effective dissemination strategy of the project results. The strong commitment of the project partners ensures dissemination activities that will be adjusted to the real market needs and towards a wide target group of potential customers to raise the maximum awareness in scientific, research and especially, industrial communities. Also, the dissemination strategy will take into account all the IPR & Confidentiality Issues. The **Fig. *1*** shows the dissemination tools and approaches that are followed by the project partners.

Fig. 1. SmartLine Dissemination and Communication tools

2.2. International Conferences

The project targets a list of international events (conferences, exhibitions, etc), which is shown below (non-exhaustive list). Most of these events are premier venues for the dissemination and communication of the project results, and for the connection with industrial, academic and research communities.

Table 1. Targeted International Conferences for dissemination of SmartLine (list constantly populated)

Event	Place	Type of Event	Targeted Audience
NANOTEXNOLOGY	Thessaloniki, Greece	Int. Conference & Exhibition	Scientific community, Research, Industry
ISFOE	Thessaloniki, Greece	Int. Symposium on OEs	Scientific community, Research, Industry
NN	Thessaloniki, Greece	Int. Conference on Nanosciences & Nanotechnologies	Scientific community, Research, Industry
LOPE-C	Munich, Germany	Int. Conference & Exhibition	Industry
IDTechEx Printed Electronics Europe	Berlin, Germany	Int. Conference & Exhibition	Industry, Research
IDTechEx Printed Electronics USA	Santa Clara, USA	Int. Conference & Exhibition	Industry, Research
E-MRS	Strasburg, France Nice, France	Scientific Conference	Scientific community
MRS	Boston, USA	Scientific Conference	Scientific community
…			

2.3. Scientific Publications

The following table provides a list of scientific journals with high impact factor that were set as submission targets for the SmartLine innovations and results.

Table 2. Targeted scientific journals

Journal	Thematic Area
Organic Electronics	Organic Electronics, materials, devices, applications
Solar Energy	Organic Photovoltaics, materials, processes
Solar Energy Materials and Solar Cells	Organic Photovoltaics, materials, processes
Thin Solid Films	Thin films, materials, processes
Materials Today	Materials, processes, applications
ACS Photonics	Photonic devices, applications
Advanced Electronic Materials	Materials for Organic Electronics, processes
Advanced Functional Materials	Materials for Organic Electronics, processes
…	

2.4. Networks & Associations

The dissemination activities planned in SmartLine aim to foster further collaborations, exchange knowledge, and raise awareness among a large group of stakeholders and players in the digital manufacturing of Organic and Printed Electronics, covering actors from the industry as well as SMEs.
Furthermore, these collaborations will be enriched by stakeholders from public bodies, European Commission representatives, press and media organisations, academic and research institutions and other related EU projects. The SmartLine consortium identified potential collaboration opportunities; promote the SmartLine project and results while helping to develop synergies between related initiatives in order to expand the project's area of application for the metrology tools and methodologies.

3. Dissemination & Communication Activities during the Reporting Period 1

This section describes the dissemination and communication activities of the SmartLine project partners during the reporting period 1, along with the details on the actions performed, the benefit to the project visibility and impact.

3.1. Organization of Events

The partners organized the following international events:

1. NANOTEXNOLOGY 2018, 30 June – 7 July 2018, Thessaloniki, Greece

The partners have been involved for the organization of the NANOTEXNOLOGY 2018 multi-event that took place at Thessaloniki, Greece at 30 June-7 July 2018. The SmartLine Project Coordinator (AUTh) is the organizer of these event since 2003 (where it started as an International Workshop on Nanosciences and Nanotechnologies) and which currently has been expanded as the largest technology, networking and matchmaking annual event in Europe with more than 800 participants every year from more than 60 countries. As it has been described in detail in the SmartLine Description of Action (DoA) the NANOTEXNOLOGY event will be the main vehicle for the dissemination and exploitation of the project results.
NANOTEXNOLOGY 2018 included the premier and internationally established events:

- **International Conference on Nanosciences & Nanotechnologies (NN18) 3-6 July**
- **International Symposium on Flexible Organic Electronics (ISFOE18) 2-5 July**
- **International Workshop on 3D Printing, 3D Bioprinting, Digital & Additive Manufacturing (I3D18) 2-6 July**
- **International Summer Schools "N&N, OE & Nanomedicine" (ISSON18) 30 June-7 July**
- **NANOTEXNOLOGY EXPO 2018, 2-6 July**
- **Business Forum, 3-5 July**
- **Matchmaking Event, 4 July**

In addition, in NANOTEXNOLOGY 2018 the following Special Workshops have been organized:

- **Workshop on EU Projects on Nanotechnologies & Advanced materials for OPVs and Perovskites**
- **HOPE-A – IAPE Joint Workshop on Organic Electronics**
- **Workshop on Computational Modeling**
- **New Business Development & Commercialization Workshop**

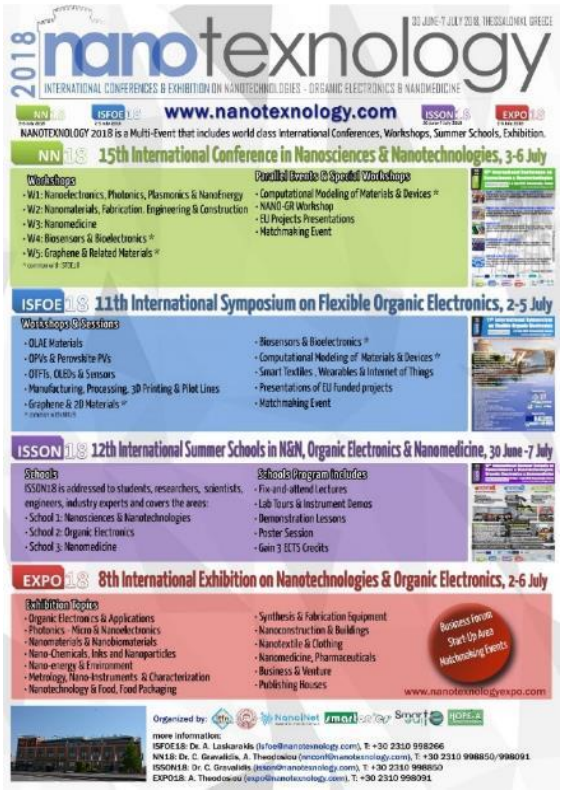

Fig. 2. Announcement of the NANOTEXNOLOGY 2018 multi-event

Fig. 3. Announcement of the ISFOE18

Fig. 4. Announcement of the NN18

Fig. 5. Announcement of the I3D18

Within the NANOTEXNOLOGY 2018, the SmartLine project has organized and supported the following Workshops:

Workshop on Organic & Large Area Electronic (OLAE) Materials

The Workshop on Organic and Large Area Electronic (OLAE) Materials will reveal, discuss and contribute to solve the fundamental issues on the synthesis and thin film fabrication of novel organic semiconductors (as conjugated polymers, evaporated small molecules or solution processed small molecules) and electrode materials, efficient charge transfer mechanisms, optimization & control of morphology.

Workshop topics:

- Printable nanomaterials for Organic Electronics
- Polymer Organic Semiconductors
- Conjugated polymers, copolymers, oligomers
- Non-fullerene acceptors
- Small Molecule Organic Semiconductors
- Novel organic/inorganic and hybrid materials
- Fullerenes, and Carbon Nanotubes in Organic Electronics
- Transparent Electrodes (organic, printable, inorganic, oxides)
- Non-transparent Electrodes & dielectrics
- Barrier Materials and Encapsulation Methods
- Organic-hybrid interfaces: characterization and application
- Synthesis & functionalization of OE nanomaterials

Workshop International Organizing Committee

- **Prof. Ravi Silva,** University of Surrey, UK
- **Prof. Georges Hadziioannou**, LCPO, University of Bordeaux 1, Bordeaux, France
- **Prof. Sabine Ludwigs**, University of Stuttgart, IPOC - Functional Polymers, Germany
- **Prof. Ioannis Kallitsis**, Department of Chemistry, University of Patras, Greece
- **Dr. Sabine Amberg-Schwab**, Fraunhofer-Institute for Silicate Research ISC, Germany
- **Dr. Argiris Laskarakis**, LTFN, Aristotle University of Thessaloniki, Greece

S.R.P. Silva, University of Surrey, UK
Energy: Can the Human Race Transit to a “free” energy model?

M. Prassas, Corning SA, France
Flexible Glass Applications & Process Scaling

More details:

https://www.nanotexnology.com/2018/index.php/workshops-isfoe18/79-isfoe-category/114-workshop-on-organic-large-area-electronic-olae-materials

Workshop on OPVs and Perovskite PVs

The Workshop on OPVs and Perovskites PVs will reveal, discuss and contribute to solving of all aspects covering the synthesis, thin film fabrication of new organic semiconductor (conjugated polymers, evaporated small molecules or solution processed small molecules) and electrode materials, efficient charge transfer mechanisms, optimization & control of blend morphology, device architectures, lifetime and stability, and mass manufacturing.

The OPVs and Perovskite PVs Workshop topics include:

- Polymer & Small Molecule Organic Semiconductors
- Organic/inorganic and hybrid materials and systems
- Perovskite PVs
- Perovskite Materials & Novel Device Concepts
- Perovskite Fabrication techniques (Vacuum, Printing)
- Synthesis of novel nanomaterials for OPVs
- Novel device architectures (e.g. single, tandem)
- Morphology & Interfaces characterization and control
- Influence of nano-morphology on device physics
- Device Stability & Lifetime
- Plasmonic OPVs
- Charge transport and microstructure relationships
- Device Modelling, Simulations & Computational Methods
- High efficiency approaches in vacuum and printing technologies
- Novel fabrication by lab- and large area processes (e.g. Printing, Vacuum, Patterning)
- Thin film monitoring and optimization of processes
- Large Scale Manufacturing & Applications

Workshop International Organizing Committee

- **Prof. Gerrit Boschloo,** Department of Chemistry, Uppsala Univeristy, Sweden
- **Dr. Konstantinos Fostiropoulos**, Helmholtz-Zentrum Berlin, Germany
- **Dr. Markus Schraber**, Linz Institute for Organic Solar Cells, Johannes Kepler University Linz, Austria
- **Prof. Vladimir Dyakonov**, University of Würzburg, Germany
- **Dr. Bertrand Fillon,** IPC, France
- **Dr. Jörg Ackermann**, Centre Interdisciplinaire de Nanoscience de Marseille (CINaM), France

More details:

https://www.nanotexnology.com/2018/index.php/workshops-isfoe18/79-isfoe-category/274-workshop-on-opvs-and-perovskite-pvs

M. Sharber, Linz Institute of Organic Solar Cells, Austria
Non-fullerene acceptor – a new material class for highly efficient solar cells

G.E. Morse, Merch, Chemicals Ltd., UK
Non-fullerence acceptors for Organic Photovoltaics

I3D18

This Workshop focuses on the cutting edge advances on 3D Printing, 3D Bioprinting, Digital and Additive Manufacturing approaches for Flexible Organic and Printed Electronics, Healthcare, Wearables, Automotive, etc. and for the fabrication of novel nanomaterials in advanced device architectures.

Topics:

- 3D Printing
- 3D Printing, Materials, Functionalities and Architectures
- 2D to 3D Printing (inkjet, screen, gravure, etc.)
- 3D Bioprinting (Structure, size, mechanical properties, etc.)
- Cell Printing Technologies (Ink-jet, Hydrogel, Laser assisted, etc) and Cell Survival issues
- Bioinks
- Additive Manufacturing
- Roll-to-roll printing processes
- Ultra Fast Pulsed Laser processing in materials and OEs (OLED, OPV, OTFTs, RFID), batteries, sensors, healthcare, smart textiles, etc)
- Ultra Fast Pulsed Laser nanoprocessing (metallic films, nanoparticles, nanowires, CNT, graphene, quantum dots, etc)
- Ultra Fast Pulsed Lasers in photonics & electronics (packaging, optical interconnects, waveguides in stretchable materials, light management layers)
- Ultra Fast Pulsed Laser integration (R2R, large area scan, registration, diagnostics, hybrid laser, printing)
- Laser two photon polymerization and Laser sintering
- Digital Manufacturing and Nanomanufacturing
- Processes, Manufacturing & Applications
- Gas Transport Processes (OVPD, PVPD, CVD)
- Vacuum Processes (Evaporation, sputtering, etc.)
- Pilot Lines for Manufacturing of Organic Electronics, Healthcare, Bioprinting
- In-Line Metrology for Characterization and Process Control
- Thin Film Metrology and Optimization of Processes

Workshop International Organizing Committee

Prof. Zheng Cui, Printable Electronics Research Center, Suzhou Institute of Nanotech, Chinese Academy of Sciences, China
Prof. Dr. rer. nat. Reinhard R. Baumann, TU Chemnitz, Germany
Dr. Peter Baumann, Apeva, Germany
Prof. Emmanuel Giannelis, Cornell University, USA
Dr. Jacques Kools, Encapsulix, France
Dr. Nello Li Pira, C.R.F. S.C.p.A, Italy
Prof. Stergios Logothetidis, Nanotechnology Lab LTFN, AUTh, Greece
Prof. Yiannis Misirlis, University of Patras, Greece
Prof. Aylin Sendemir-Urkmez, Ege University, Turkey

N. Li Pira, CRF, Italy
Customization and integration of materials into novel components for the car of the future

V. Matskos, OET, Greece
OET hits 7.4% new world record efficiency…

More details:

https://www.nanotexnology.com/2018/index.php/i3d18

HOPE-A – IAPE Joint Workshop on Organic & Printed Electronics

The topic of this Joint Workshop is to promote networking, twinning, joint ventures and business between members of HOPE-A and IAPE and their associated partners in order to foster the creation of partnerships, B2B and collaborations through bi-lateral and/or under EU H2020 programmes between Greece and China.
This Joint Workshop will present the current state of technology and entrepreneurial activities of the HOPE-A and IAPE partners in Greece and China on Organic and Printed Electronics nano-materials, devices (OPVs, OLEDs, OTFTs, sensors, etc.), equipment, precision metrology tools, manufacturing processes, integrated systems and products, and applications in Energy, Lighting, Electronics, Automotive, Healthcare, 3D printing, Wearables, Internet of Things, to name but a few.

S. Logothetidis AUTh, Greece
LTFN/AUTh activities

A. Laskarakis AUTh, Greece
FOF SmartLine Project

Fig. 6. Participants of the HOPE-A – IAPE Joint Workshop on Organic & Printed Electronics

More Details:
https://www.nanotexnology.com/2018/index.php/workshops-isfoe18/79-isfoe-category/320-hope-a-iape-joint-workshop-on-organic-electronics

2. 9th Workshop – Flexible & Printed Electronics Industry: Targeting the Digital Transformation 22 October 2018, Athens, Greece

SmartLine has organized the 9th Workshop – Flexible & Printed Electronics Industry: Targeting the Digital Transformation that took place at Athens, Greece at 22 October 2018.

The Workshop brought together Top-class Scientists, Engineers, Key Industrial Players, End-Users, Entrepreneurs, Investors, Policy Makers and Representatives from the National and EU Authorities to discuss, network and establish the Strategy and Policy for boosting the rapidly evolving Flexible & Printed Electronics multi-Billion Industry in Green Energy, Lighting, Electronics, Automotive, Smart Buildings, Greenhouses, Intelligent Packaging, Wearables, IoT, etc. and its role in the Digital Transformation of the Industry.

Topics discussed include:

- The Flexible & Printed Electronics Sector and Activities
- Manufacturing and Processes of Flexible Organic & Printed Electronics
- Printed Organic Electronics and Automation in Factories of the Future
- Tools for the Digital Transformation of the Industry
- Energy and Lighting for Smart Buildings, Automotive, Greenhouses, Healthcare, etc.
- Sensors, Biosensors in Electronics, Smart Textiles, Wearables, Internet of Things (IoT)
- Intelligent and Smart Packaging
- Clusters and Associations in Flexible & Printed Electronics Worldwide
- Flexible & Printed Electronics Entrepreneurial activities
- Funding & Commercialization Opportunities

The Workshop brought together more than 50 companies, 20 universities and 120 top Stakeholders from Greece and from abroad (Spain, Turkey, Italy, Germany, Luxembourg) representing a wide range of fields to which Flexible and Printed Electronics provide added value and ground-breaking applications, i.e. Energy, Lighting, Electronics, the Automotive Industry and Transports, Intelligent Packaging, Smart Textiles, Healthcare, Sensors and Biosensors, Wearables and IoT.

During this event, the SmartLine partners have discussed with significant number of representatives from industries and SMEs about the activities of the project and planned future collaborative activities in order to enable the adoption of the project innovations in the field of closed-loop manufacturing of advanced materials for applications in OEs as well as for other consumer applications.

Fig. 7. Announcement of the 9th Workshop – Flexible & Printed Electronics Industry: Targeting the Digital Transformation

9TH WORKSHOP

Flexible & Printed Electronics Industry

(Targeting the Digital Transformation)

Monday 22 October 2018, Divani Caravel Hotel, Athens, Greece

Organized by: ltfn HOPE-A

FPEs Revolutionize Energy, Lighting, Displays, Electronics, Transportation, Greenhouses, Buildings, Bioelectronics, Healthcare, Smart Textiles, Wearables, IoT, Intelligent Packaging, Signage, Security, etc, Being the most Green Technologies and Creating a several 100B€ Market. **(www.ltfn.gr/9ws)**

20:00	**VIP Meeting 21 October 2018**		
	PROGRAM 22 October 2018		
08:00 – 20:00	**Registration, Posters, Exhibitors**		
09:00 – 09:20	**Welcome & Introduction by the Workshop's Chairman,** Prof. S. Logothetidis		
	Welcome by the Director of the Office of the Minister of Digital Policy & Telecommunication, Mr. P. Skoutas		
Session 1:	**FPEs: Current Status, Markets & Benefits for Sustainable Growth** (Chairs: Prof. J. Kallitsis, S. Logothetidis)		
09:20 – 09:50	**Intelligent Manufacturing of Flexible & Printed Electronics Industry to Boost Digital Transformation**	**Prof. S. Logothetidis,** Nanotechnology Lab LTFN & HOPE-A, Greece	
09:50 – 10:10	**Active Materials for Printed Organic Electronics**	**Prof. J. Kallitsis,** University of Patras, Greece	
Session 2:	**FPEs International Collaborations** (Chair: Dr. A. Laskarakis, D. Mantis)		
10:10 – 10:25	**HOPE-A: Connecting the Greek Industrial Stakeholders Globally**	**Ms. F. Logothetidi,** HOPE-A, Greece	
10:25 – 10:40	**Bringing the Factory of the Future (SmartLine) and Open Innovation Environment (CORNET) in FPEs**	**Dr. A. Laskarakis,** LTFN/COPE-H, AUTh, Greece	
10:40 – 10:55	**Hellenic Photonics Cluster: Facing the future with collaboration**	**Dr. E. Hontzopoulos,** HPhos & Prime Laser Technology S.A., Greece	
10:55 – 11:10	**ΣΥΒΙΠΥΣ Activities to promote Packaging & Materials**	**Mr. D. Mantis,** Association of Greek Manufacturers of Packaging & Materials	
11:10 – 11:30	**Networking Break, Posters, Exhibitors**		
	Salutation from the Deputy Minister of Environment & Energy, Mr. S. Famellos		
Session 3:	**Energy and Lighting for Automotive, Buildings, GreenHouses** (Chairs: Dr. N. Kechagias, N. Li Pira)		
11:40 – 12:00	**Large Area OEs for Energy Production & Lighting in Automotive, Buildings and Greenhouses**	**Dr. E. Pechlivani,** OE-Technologies, Greece	
12:00 – 12:20	**OPVs, OLEDs and Sensors for the Car of the Future**	**Dr. Nello Li Pira,** Centro Ricerche Fiat, S.C.p.A, Italy	
12:20 – 12:40	**Upscaling of High Performance C.Polymers for OPV Modules**	**Dr. C. Chochos,** Advent Technologies, Greece	
12:40 – 13:00	**Flexible and Printed Electronics in Transport & Mobility Applications**	**Dr. E. Bekiaris,** Hellenic Institute of Transport, CERTH, Greece	
Session 4:	**Upscaling FPEs Manufacturing and 3D Printing** (Chairs: Dr. N. Meyer, Dr. A. Laskarakis)		
13:00 – 13:20	**Industrial Manufacturing of FPElectronic Devices**	**Mr. E. Mekeridis,** OE-Technologies, Greece	
13:20 – 13:40	**Upscaling R2R-processes towards production**	**Dr. N. Meyer,** Coatema Coating Machinery GmbH, Germany	
13:40 – 15:00	**Lunch, Networking, Posters, Exhibitors**		
Session 5:	**Intelligent Packaging & Retail** (Chairs: Mr. E. Mekeridis, Dr. A. Laskarakis)		
15:00 – 15:15	**Applications of Smart Packaging**	**Dr. L. Tourasanidis,** A. Hatzopoulos S.A., Greece	
15:15 – 15:30	**Large area nanostructured surfaces for Security Applications**	**Mr. Th. Tachtsidis,** Nanotypos, Greece	
15:30 – 15:45	**Manufacturing Flexible & Printed RFIDs and Sensors for IoP**	**Mr. S. Fachouri,** OE-Technologies, Greece	
15:45 – 15:55	**Nanotechnology in Packaging: The Marketing Approach**	**Mr. G. Triantafyllou,** AllPack Hellas, Greece	
Session 6:	**Healhtcare, IoT, Wearables & Smart Textiles** (Chair: Dr. E. Pechlivani)		
15:55 – 16:10	**Nanomedicine Applications, Biosensors & 3D Bioprinting**	**Dr. V. Karagkiozaki,** BL Nanobiomed, Greece	
16:10 – 16:20	**Applications and prospects of FPEs to Electronics**	**Mr. Ch. Giordamlis,** PRISMA Electronics, Greece	
16:20 – 16:30	**Applications to Smart Textiles & Wearables**	**Mr. P. Kitsikopoulos,** ELVE, Greece	
16:30 – 16:40	**FPEs Industrial Applications and Standards**	**Dr. S. Vasilakos, Dr Silvia Pavlidou,** MIRTEC S.A., Greece	
16:40 – 17:45	**Networking Break, Posters, Exhibitors**		
Session 7:	**Funding & Commercialization** (Chair: Prof. S. Logothetidis)		
17:45 – 18:00	**Digital Transformation of European Industry & DIHs**	**Ms. A. Tasigiorgou,** External expert of the European Commission on the Catalogue of DIHs	
18:00 – 18:15	**Starting up with Metavallon VC**	**Ms. K. Kanteraki,** Metavallon VC, Greece	
Session 8:	**Start Ups Competition for the Year Award** (Chairs: Dr. N. Meyer, Prof. J. Kallitsis, Ms. K. Kanteraki)		
18:15 – 19:00	Pitches from Start-Ups (5 min each) (OET, Nanotypos, Prisma, Advent, BL)		
19:00 – 19:30	Award & Main Points		
19:30 – 20:00	**Closing Remarks - End of Workshop**		

Fig. 8. Program of the 9th Workshop

S. Logothetidis AUTh, Greece
LTFN/AUTh activities

A. Laskarakis AUTh, Greece
FOF SmartLine Project

Fig. 9. Prof. S. Logothetidis (SmartLine Coordinator) discussing with Dr. N. LiPira (SmartLine partner CRF) with the Deputy Minister for Environment & Energy Mr. S. Famellos

Fig. 10. Exhibition Booth of the SmartLine partner OET

Fig. 11. Dr. E. Pechlivani (SmartLine partner OET)

Fig. 12. Dr. N. LiPira (SmartLine partner CRF)

Fig. 13. Mr. E. mekeridis (SmartLine partner OET)

3.2. Presentations & Participations in International Events

During the first 18 months of the project, the partners have achieved a strong track-record in the participation and presentation of results relevant to the project in numerous international events (Conferences, Workshops, etc.). The **Table 3** shows the list of these activities.

Table 3. Presentations and participations of partners in international events

Event	Presentation	Type	Audience	Partner
LABELEXPO EUROPE 25-28/09/2017 Brussels	Visit	Visit	Investors, Customers	OET
IoT Solutions World Congress 3-5/10/2017 Barcelona, Spain	Visit	Visit	Investors, Customers	OET
Manufuture Zero Defect Manufacturing Sub-platform 5/10/2017	Participation (S. Logothetidis, A. Laskarakis)	Participation	Research Community, Industry, Policy Makers	AUTh
ISOS-10, 18-20/10/2017 Malta	**Stability Testing of Printed Organic Photovoltaics Manufactured by R2R Pilot Line with Ultra-Fast Laser Patterning and In-Line Optical Metrology** S. Tsimikli[1], E. Mekeridis[1], A. Laskarakis[2], C. Kapnopoulos[2], A. Myriofitis[2], V. Matskos[1], S. Logothetidis[2] [1] Organic Electronic Technologies, Greece [2] LTFN, Aristotle University of Thessaloniki, Greece	Oral	Scientific Community, Research, Industry	OET, AUTh
ISOS-10, 18-20/10/2017 Malta	**Stability Testing of Printed Organic Photovoltaics Manufactured by R2R Pilot Line with Ultra-Fast Laser Patterning and In-Line Optical Metrology** S. Tsimikli[1], E. Mekeridis[1], A. Laskarakis[2], C. Kapnopoulos[2], A. Myriofitis[2], V. Matskos[1], S. Logothetidis[2] [1] Organic Electronic Technologies, Greece [2] LTFN, Aristotle University of Thessaloniki, Greece	Poster	Scientific Community, Research, Industry	OET
ICT Proposers Day 9-10/11/2017 Budapest, Hungary	Participation (S. Logothetidis, A. Laskarakis)	Participation	Scientific Community, Research Policy makers, Industry	AUTh
EU PV Cluster 24-25/10/2017 Brussels	**Presentation of LTFN activities in smart machines, tools and processes for the precision synthesis of nanomaterials with tailored properties for Organic Electronics** A. Laskarakis	Oral	Research Community, Industry, Policy Makers	AUTh
OLED TECH SUMMIT 25.-26.10.2018 Berlin	**Organic Vapor Phase Deposition (OVPD) of OLED for Organic Display and Lighting Applications**	Oral	Industry, Investors, Customers	AIXTRON
ICT Proposers Day 9-10/11/2017 Budapest, Hungary	Activities in Organic Electronics (E. Pechlivani)	Oral	Scientific Community, Research Policy makers, Industry	OET

1st Workshop on EPPN 27-28/11/2017 Brussels	**Novel pilot lines for fabrication of Organic Electronics** S. Logothetidis	Invited Oral	Industry, Research, Policy Makers	AUTh
Automotive Surfaces 2017 30/11-1/12/2017 Berlin, Germany	**Automotive (decorative/materials)** L. Belforte	Invited Oral	Industry (>120 participants)	CRF
Emerging Technologies, 24-26/1/2018 Shanghai, China	**R2R Manufacturing Processes for Full Printed Organic Photovoltaics** E.M Pechlivani[1,2], S. Logothetidis[2,3], A. Laskarakis[2], V. Matskos[1] [1] Organic Electronic Technologies, Greece [2] LTFN, Aristotle University of Thessaloniki, Greece	Oral	Scientific Community, Research, Industry, Investors, Customers	OET, AUTh
Prinse 2018 31/1-1/2/2018 Oulu, Finland	**Printed electronics** L. Belforte	Invited Oral	Industry, Investors, Customers	CRF
LOPE-C 2018	Demonstrator – Air turns for contactless web handling and metrology.	Exhibition	Industry, Research Policy Makers	IBS
LOPE-C 2018	Participation to the Exhibition. Demonstrators for OE devices on flexible substrates	Exhibition	Industry, Research Policy Makers	AUTh
LOPE-C 2018	Participation to the Exhibition. Demonstrators for OE devices on flexible substrates	Exhibition	Industry, Research Policy Makers	OET
IDTechEx 2018 Printed Electronics Europe 11-12/4/2018, Berlin, Germany	**Revolutionizing Roll-to-Roll Manufacturing of fully Printed Organic Electronics with in-line Metrology and Control in Automatic decision-making Process** E.M Pechlivani	Oral	Industry, Investors, Customers	OET
IDTechEx 2018 Printed Electronics Europe11-12/4/2018, Berlin, Germany	Participation to the Exhibition. Demonstrators for OE devices on flexible substrates	Booth	Industry, Investors, Customers	OET
IDTechEx 2018 Printed Electronics Europe11-12/4/2018, Berlin, Germany	Participation to the Exhibition. Demonstrators for OE devices on flexible substrates	Booth	Industry, Investors, Customers	AUTh
IDTechEx 2018 Printed Electronics Europe11-12/4/2018, Berlin, Germany	Oral presentation and Participation to the Exhibition.	Booth	Industry, Investors, Customers	SUR
Luce Imaging Microscopia Spettri 17-19/05/2018 ENEA	**CRF activities in Organic Electronics** Marie Marguerite Dugand	Invited	Research, Industry,	CRF
CPES 2018 22-24/05/2018 Toronto, Canada	**Intelligent Nanomanufacturing of Flexible Organic Electronic Devices: Towards the Industry 4.0** S. Logothetidis	Invited	Scientific & Research Community, Industry	AUTh
Intesolar Europe 2018 20-22/6/2018	Participation to the Exhibition. Demonstrators for OE devices on flexible substrates	Booth	Industry, Investors, Customers	OET AUTh

Munich, Germany				
Factories of the Future (FoF) Community Day Workshop 27/6/2018 Brussels	**Smart in-line Metrology and Control for Boosting the Yield and Quality of high-volume Manufacturing of Organic Electronics (SmartLine)** A. Laskarakis	Oral	Industry, Investors, Customers	AUTh
NANOTEXNOLOGY 2018 EXPO 30/6-7/7/2018, Thessaloniki, Greece	Participation to the Exhibition. Demonstrators for OE devices on flexible substrates	Booth	Industry, Investors, Customers	AUTh
NANOTEXNOLOGY 2018 EXPO 30/6-7/7/2018, Thessaloniki, Greece	Participation to the Exhibition. Demonstrators for OE devices on flexible substrates	Booth	Industry, Investors, Customers	OET
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**Solution processable white-light OLEDs based on novel copolymers with blue, yellow and red chromophores** M. Gioti[1], K. Stavrou, [1] D. Kokkinos,[2] K. Simitzi,[3] A. K. Andreopoulou,[3] J. K. Kallitsis,[3] S. Logothetidis[1] [1] LTFN, Aristotle University of Thessaloniki, Greece [2] Organic Electronic Technologies, Greece [3] Dept Chemistry, University of Patras, Greece	Oral	Scientific & Research Community, Industry	AUTh, OET
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**OET Enabling Fully Printed Organic Photovoltaic and OLED Technology for Mass Market Entry** V. Matskos Organic Electronic Technologies P.C. (OET), Greece	Oral	Scientific & Research Community, Industry	OET
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**Novel methodology based on Spectroscopic Ellipsometry for In-Line and Real-Time quality control of Roll-to-Roll printed Perovskite films** A. Zachariadis[1], C.Kamaraki[1], C.Kapnopoulos[1], A.Galatsopoulos[1], E.Mekeridis[2], A.Laskarakis[1], S.Logothetidis[1] [1] LTFN, Aristotle University of Thessaloniki, Greece [2] Organic Electronic Technologies, Greece	Oral	Scientific & Research Community, Industry	AUTh, OET
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**Project FOF SmartLine: Smart In-line metrology and control for boosting the yield and quality of high-volume manufacturing of Organic electronics** A. Laskarakis Nanotechnology Lab LTFN, Aristotle University of Thessaloniki, Greece	Oral	Scientific & Research Community, Industry	AUTh
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**Application of areal wavelength-scanning interferometer** Jorrit de Vries[1], Ivo Hamersma[1], Theresa Burke[1], C. Kapnopoulos[2], S. Logothetidis[2], E. Mekeridis[3] [1] IBS Precision Engineering, Eindhoven, The Netherlands [2] LTFN, Aristotle University of Thessaloniki, Greece [3] Organic Electronic Technologies, Greece	Oral	Scientific & Research Community, Industry	AUTh, OET, IBS
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**In-Line Real-Time Spectroscopic Ellipsometry for quality control of Roll-to-Roll printed nanomaterials for Organic Photovoltaics** A.Zachariadis[1], C. Kapnopoulos[1], E. Mekeridis[2], A. Laskarakis[1], S. Logothetidis[1] [1] LTFN, Aristotle University of Thessaloniki, Greece [2] Organic Electronic Technologies, Greece	Oral	Scientific & Research Community, Industry	AUTh, OET

ISFOE18 2-5/07/2018 Thessaloniki, Greece	**Installing Organic Photovoltaics on Greenhouse Roofs: Effects on Plant Growth and on the Operation of the Facility** C. Zisis[1], S. Tsimikli[2], A. Laskarakis[1], E. Mekeridis[2], E. M Pechlivani[2], C.Gravalidis[1], M. Chatzidis[1], V. Matskos[2] and S. Logothetidis[1] [1] LTFN, Aristotle University of Thessaloniki, Greece [2] Organic Electronic Technologies, Greece	Oral	Scientific & Research Community, Industry	AUTh, OET
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**Toward slot-die coating of flexible and large-area organic-light emitting diodes in ambient conditions** K.Stavrou[1], M.Gioti[1], C.Koutsiaki[1], C.Kamaraki[1], E.Koutsounanos[1], D. Kokkinos[2], S. Logothetidis[1] [1] LTFN, Aristotle University of Thessaloniki, Greece [2] Organic Electronic Technologies, Thessaloniki, Greece	Oral	Scientific & Research Community, Industry	AUTh, OET
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**The influence of $PC_{60}BM$ layer on device performance in printed perovskite solar cells** C.Kamaraki[1], A.Zachariadis[1], A.Galatsopoulos[1], C.Koutsiaki[1], K.Stavrou[1], C.Kapnopoulos[1], E.Mekeridis[2], S.Kassavetis[1], C.Gravalidis[1], A.Laskarakis[1], S.Logothetidis[1] [1] LTFN, Aristotle University of Thessaloniki, Greece [2] Organic Electronic Technologies, Greece	Poster	Scientific & Research Community, Industry	AUTh, OET
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**Investigation of the optical properties of OVPD and VTE deposited thin films for Organic Photovoltaics (OPVs)** V. Foris, A. Papamichail, A. Zachariadis, A. Laskarakis, A. Logothetidis Nanotechnology Lab LTFN, Aristotle University of Thessaloniki, Greece	Poster	Scientific & Research Community, Industry	AUTh
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**First-Principles DFT study on the adsorption of $PC_{60}BM$ on Ag surface** A. Stamateri, S. Logothetidis Nanotechnology Lab LTFN, Aristotle University of Thessaloniki, Greece	Poster	Scientific & Research Community, Industry	AUTh
ISFOE18 2-5/07/2018 Thessaloniki, Greece	**Comparable study on the properties of PBDB-T and ITIC thin films** Z.Kyroudis[1], A.Zachariadis[1], C.Kapnopoulos[1],C.Kamaraki[1], K.Stavrou[1],E.Mekeridis[2], C.Gravalidis[1], A.Laskarakis[1], S.Logothetidis[1] [1] LTFN, Aristotle University of Thessaloniki, Greece [2] Organic Electronic Technologies, Greece	Poster	Scientific & Research Community, Industry	AUTh, OET
NN18 3-6/07/2018 Thessaloniki, Greece	**Commercialization of Fully R2R Printed Organic Photovoltaics for Eco-Friendly Power Generation: Towards Industry 4.0** E.M Pechlivani Organic Electronic Technologies P.C. (OET), Greece	Invited	Scientific & Research Community, Industry	OET
I3D18 3-6/07/2018 Thessaloniki, Greece	**OET hits 7.4% New World Record Efficiency for Single Structure Fully Printed Organic Photovoltaic by Roll to Roll Processes** E. Mekeridis[1], S. Tsimikli[1], A. Zachariadis[2] , E.M. Pechlivani[1], A. Laskarakis[2], C. Kapnopoulos[2], S. Logothetidis[2], V. Matskos[1] [1] Organic Electronic Technologies, Greece	Oral	Scientific & Research Community, Industry	AUTh, OET

	[2] LTFN, Aristotle University of Thessaloniki, Greece			
I3D18 3-6/07/2018 Thessaloniki, Greece	**Color- Tailored Polymer OLEDs: Manufacturing and Characterization** M. Gioti[2], D. Kokkinos[1], K. Stavrou[2], S. Kassavetis[2], E. Mekeridis[1], E.M. Pechlivani[1], S. Logothetidis[2] [1] Organic Electronic Technologies, Greece [2] LTFN, Aristotle University of Thessaloniki, Greece	Oral	Scientific & Research Community, Industry	AUTh, OET
I3D18 3-6/07/2018 Thessaloniki, Greece	**Customization and integration of materials into novel components for the car of the future** N. Li Pira Physical Analysis Department,Group Materials Labs, C.R.F. S.C.p.A Corso Torino, Italy	Invited	Scientific & Research Community, Industry	CRF
I3D18 3-6/07/2018 Thessaloniki, Greece	**Intelligent Nanomanufacturing of Flexible Organic Electronic Devices** A. Laskarakis Nanotechnology Lab LTFN, Aristotle University of Thessaloniki, Greece	Invited	Scientific & Research Community, Industry	AUTh
ICFPE2018 25-28/09/2018 Changzhou, China	**Intelligent Nanomanufacturing of Flexible Organic Electronic Devices: Towards the Industry 4.0** S. Logothetidis[1,2], **A. Laskarakis[1]**, E. Mekeridis[3], C. Kapnopoulos[1], E. M. Pechlivani[3], V. Matskos[3] [1] LTFN, Aristotle University of Thessaloniki, Greece [2] HOPE-A, Greece [3] Organic Electronic Technologies, Greece	Invited Oral	Scientific & Research Community, Industry	OET, AUTh
ICFPE2018 25-28/09/2018 Changzhou, China	**Tailored Fully Printed OPVs and OLEDs for Mass Market Entry: Towards Industry 4.0** V. Matskos Organic Electronic Technologies P.C. Thessaloniki, Greece	Invited Oral	Scientific & Research Community, Industry	OET
1st Workshop Nano – Greece-Turkey 1/10/2018 Istanbul, Turkey	**Research activities and facilities of Aristotle University of Thessaloniki for OEs** S. Logothetidis	Oral	Scientific & Research Community, Industry	AUTh
1st Workshop Nano – Greece-Turkey 1/10/2018 Istanbul, Turkey	**LTFN Activities in Intelligent Nanomanufacturing of OPVs & OLEDs** A. Laskarakis	Oral	Scientific & Research Community, Industry	AUTh
Industrial Technologies 2018, 29-31/10/2018 Vienna Austria	Participation to the Exhibition. Demonstrators for OE devices on flexible substrates	Booth	Industry, Investors, Customers	AUTh, OET
IDTEchEx Printed Electronics USA 2018, 14-15/11/2018, Santa Clara, USA	**Intelligent Nanomanufacturing of Flexible Organic Electronic Devices: Towards the Industry 4.0** S. Logothetidis[1,2], **A. Laskarakis[1]**, E. Mekeridis[3], C. Kapnopoulos[1], E. M. Pechlivani[3], V. Matskos[3] [1] LTFN, Aristotle University of Thessaloniki, Greece [2] HOPE-A, Greece [3] Organic Electronic Technologies, Greece	Oral	Scientific & Research Community, Industry	AUTh, OET
IDTEchEx Printed Electronics USA 2018, 14-15/11/2018, Santa Clara, USA	**Exhibition Booth**	Booth	Scientific/Research Community, Industry, Customers	SUR
7th Korea-EU NanoWorkshop 12/11/2018	**LTFN Activities in Intelligent Nanomanufacturing of OPVs & OLEDs** A. Laskarakis	Invited	Scientific & Research Community,	AUTh

Seoul, S. Korea			Industry	
IDTEchEx Printed Electronics USA 2018, 14-15/11/2018, Santa Clara, USA	**Participation to the Exhibition**	Exhibition	Scientific & Research Community, Industry	AUTh, OET

In the following, further details on the dissemination activities of the partners are presented

3.2.1. AUTh

Workshop: "European Pilot Production Network" Brussels 28 November 2017

The partner AUTh has participated to the 1st Workshop on Pilot Production Network (EPPN) that took place at Brussels, in 27-28/11/2017, for an invited presentation of the pilot lines at AUTh and the novel research activities for the nano-nanufacturing of flexible Organic Electronics devices, by the implementation of intelligent metrology tools. The SmartLine coordinator (Prof. S. Logothetidis) provided an oral presentation on the above subjects, and discussed with representatives from academic, research and industrial communities as well as with representatives from European Commission on the prospects of in-line metrology tools and methodologies and for future collaborations for the transfer of these innovations in the market.

Fig. 14. Prof. S. Logothetidis (AUTh) at the EPPN Workshop in Brussels

Printable Flexible Wearable Electronic Symposium (CPES 2018), 22-25/05/2018, Toronto, Canada

Prof. S. Logothetidis from AUTh has been invited by the organizers to participate for an Invited Presentation at the Printable Flexible Wearable Electronic Symposium (CPES 2018), 22-25/05/2018, Toronto, Canada, and the title of his presentation was: Intelligent Nanomanufacturing of Flexible Organic Electronic Devices: Towards the Industry 4.0. The SmartLine coordinator discussed with representatives from academic, research and industrial communities on the prospects of in-line metrology tools and methodologies and for future collaborations for the transfer of these innovations in the market. The participation in this event has been

communicated to the SmartLine Project Officer. The benefit of this participation is that it facilitated the creation of connections between the SmartLine partners and the relevant stakeholders from Academia, Research and Industry from Canada and USA. These stakeholders are interested for the SmartLine innovations and results and open links are maintained, which are expected to further increase the impact of the project activities.

NANOTEXNOLOGY 2018 EXPO, 30/6-7/7/2018, Thessaloniki, Greece

AUTh has participated at the NANOTEXNOLOGY EXPO 2018, 2-6 July to promote its activities within the SmartLine project.

Fig. 15. Participation of AUTh at the NANOTEXNOLGOY 2018 EXPO
(photo shows the project Coordinator Prof. S. Logothetidis explaining the AUTh activities on OEs to the Alternate Minister for Research and Innovation Mr. C. Fotakis.

9th International Conference on Flexible and Printed Electronics – ICFPE

AUTh has participated at the 9th International Conference on Flexible and Printed Electronics, Grand Metropark Universal Dinosaur Town Hotel in Changzhou, China, September 25-28, 2018. Dr. A. Laskarakis presented an oral presentation with title: Intelligent Nanomanufacturing of Flexible Organic Electronic Devices: Towards the Industry 4.0 to the high number of participants to the ICFPE2018, which include representatives from Universities from China, Korea, Japan, Singapore, as well as from other Asian countries. Furthermore, the majority of the participants to the event came from the Industrial communities of China, which exhibited strong interest to the activities of SmartLine. Dr. A. Laskarakis had several discussions with these representatives and exchanged views and prospects about the implementation of in-line metrology and control tools for manufacturing of a huge variety of novel thin films and products by solution-based processes in sheet-to-sheet and roll-to-roll configurations. These views are expected to strongly benefit the SmartLine project since they will provide new ideas on how to implement and integrate metrology tools for the quality control of various materials in different manufacturing configurations.

Moreover, Dr. A. Laskarakis has discussed with representatives from the Industrial Association for Organic Electronics of China (IAPE), and the Korean Association of Organic & Printed Electronics (KOPEA) and strengthen the links between these associations with the LTFN and opened the way for future collaborations with the SmartLine partners. Another benefit of this participation/presentation to ICFPE2018 was the commitment of the Asian colleagues to participate to the events to be organized by the SmartLine project to network directly with the partners and establish bilateral industrial collaborations.

Finally, in this event, Dr. A. Laskarakis met with representatives from OE-Association and discussed future activities in the fields of Organic & Printed Electronics.

Fig. 16. Participation and presentation by AUTh (A. Laskarakis) at the ICFPE 2018

1st Workshop Nano – Greece-Turkey 1/10/2018 Istanbul, Turkey

AUTh has participated to the 1st Workshop Nano – Greece-Turkey 1/10/2018 Istanbul, Turkey and presented the activities of AUTh in Organic and Printed Electronics. The participants presented the SmartLine project activities and targets as well as the prospects for further collaboration with the experts from Sabanci University (SUNUM) to commonly promote the field of OEs by the use of novel materials and device concepts.

Fig. 17. Group photo from the Workshop at SUNUM

Industrial Technologies 2018, 29-31/10/2018, Vienna, Austria

AUTh has participated to the **Industrial Technologies** and presented the activities of AUTh in Organic and Printed Electronics at the exhibition booth. Several discussions with the event participants took place and several contacts and plans for further collaboration, which will benefit the SmartLine project were established.

Fig. 18. Exhibition booth at the Industrial Technologies 2018

IDTEchEx Printed Electronics USA 2018, 14-15/11/2018, Santa Clara, USA

AUTh has participated at the IDTEchEx Printed Electronics USA 2018. Prof. S. Logothetidis r. A. Laskarakis presented an oral presentation for the innovations related to SmartLine regarding the the robust, non-destructive, ultra-fast and in-line Precision Metrology (optical, electrical, structural, etc) and the large experimentation data analytics for the quality control of large area printable & flexible & printable OE devices

and the ultra-fast digital feedback to the pilot and production lines for the closed loop manufacturing of OE devices with tailored performance and high production yield.

Prof. S. Logothetidis had several discussions with representatives from industrial communities from USA, Canada, Europe and Asia and exchanged views and prospects about the implementation of in-line metrology and control tools for the digital nanomanufacturing of advanced products based on Organic Electronics. These discussions will benefit the SmartLine project since they create new links for the industrial adoption of the project results to different materials for manufacturing of mass-market products.

Also, the innovations of the project were demonstrated by an exhibition booth at this event.

Fig. 19. Exhibition booth at the event and SmartLine Coordinator Prof. S. Logothetidis

7th Korea-EU NanoWorkshop, 12/11/2018, Seoul, S. Korea

Fig. 20. Participation of AUTh (Dr. A. Laskarakis) to the 7th EuKorea-EU NanoWorkshop

AUTh has participated at the 7th Korea-EU NanoWorkshop that took place at Seoul, S. Korea at 12 November 2018, where Dr. A. Laskarakis presented an invited presentation with title: Intelligent In-line Optical Metrology for the optimization of manufacturing of Flexible Organic Electronic Devices. With this presentation, he described the AUTh activities in the manufacturing of OEs and he presented the activities related to the development of in-line metrology tools for the optimization of OE device fabrication. Also, he discussed with

representatives from KOPEA (Korean Association for Organic Electronics) for establishment of collaborations (also within the HOPE-A, www.hope-a.com, with which there is a singed Momerandum of Understanding-MoU).

Finally, it was discussed a roadmap for collaboration in relevant activities on flexible OEs with the Korean stakeholders and to network with EU entities with expertise in OEs.

3.2.2. OET

OET has participated in Conferences and Exhibitions for the dissemination of the project activities and for networking with other entities over the whole value chain. Also, exhibition booths were used for the promotion of the project and distribution of information material (e.g. leaflets, brochures).

In more detail, the presentations of the partners with acknowledgements in SmartLine include the following:

IoT Solutions World Congress Participation

OET participated as a visitor in the IoT Solutions World Congress, which took place from the 3rd to the 5th of October 2017 in Barcelona, in order to enable the accelerated uptake by the industry of in-line metrology tools, methodologies and related control automation systems on pilot and production printing lines on organic electronics for digitization manufacturing. This event's main theme was the accelerating growth, adoption and widespread use of industrial IoT. Over 13,000 visitors, 250 speakers and 220 exhibiting companies, enjoyed the leading international event. OET had the opportunity to engage in networking and enable the accelerated uptake by industry IoT thinkers towards the Smartline concept with innovative solutions benefitting many industries. OET participated also, in the RespiceSME workshop on Light technologies in Transport, Manufacturing, Energy & Environment in order to establish networks with other European Clusters, Associations, and Projects.

Fig. 21. OET at IoT Solutions World Congress

The travel has been done under the umbrella of "Industrial collaborations". The aim of the travel was to promote Smartline activities and approach stakeholders, end users and other investor schemes.

ISOS10

OET took part in the "International Summit on Stability of Organic & Perovskite Solar Cells" (ISOS-10), held on October 18-20, 2017 in Malta by Malta College of Arts, Science & Technology (MCAST). During the event, interesting results and developments regarding the stability testing and lifetime of Organic & Perovskite Photovoltaics have been shown and OET has presented some of its latest results regarding the stability of OPVs in extreme weather conditions in "Stability Testing of Printed OPVs Manufactured by R2R Production Line with Ultra-Fast Laser Patterning & In-Line Optical Metrology".

Fig. 22. OET at ISOS10

LABELEXPO EUROPE 2017

OET participated as a visitor in the LABELEXPO EUROPE in 25 - 28 September 2017. Labelexpo Europe is the world's largest event for the label and package printing industry.

The travel has been done under the umbrella of "Industrial collaborations". The aim of the travel was to networking and promote Smartline activities and approach stakeholders, end users and other investor schemes.

ICT Proposers Day 2017

OET was present at ICT Proposers Day, which took place on 9 and 10 November in Budapest, Hungary. Dr. Ria Pechlivani presented the expertise of OET during the Electronic Smart Systems and Flexible & Wearable Electronics Session. The aim of the travel was to promote Smartline project under the umbrella of "Networking with European Projects, Clusters and Associations".

Emerging Technologies 2018

OET successfully participated the exciting event of Emerging Technologies on 24-26 Jan. 2018, at Shanghai, China, sharing its booth alongside Nanotechnology Lab LTFN. On its participation, OET had the opportunity to share its findings on its presentation "R2R Manufacturing Processes for Full Printed Organic Photovoltaics" by

Dr. Ria Pechlivani and promote Smartline project. Specifically, The aim of the travel was to promote Smartline activities at Asia (M1-M6) under the umbrella of "Connections with Academic, Research and Industrial members worldwide"

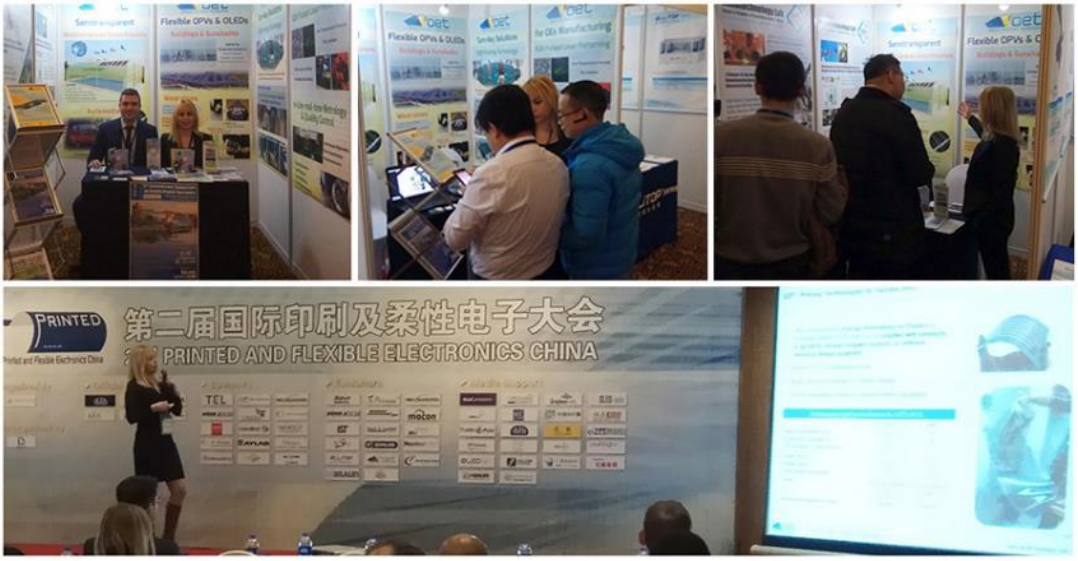

Fig. 23. OET at Emerging Technologies 2018, Shangai, China

IDTechEx 2018 Printed Electronics Europe Conference and Exhibition

IDTechEx Printed Electronics Europe took place in Berlin on 11 - 12 April 2018. On its participation, OET had the opportunity to share its findings on its presentation "Revolutionizing Roll-to-Roll Manufacturing Of Fully Printed Organic Electronics With In-Line Metrology And Control In Automatic Decision-Making Process" by Dr. Ria Pechlivani. Also, OET had a booth alongside Nanotechnology Lab LTFN.

OET targets at this event were to present energy solutions and technologies for an intelligent, sustainable and cost-effective energy supply, connect with international stakeholders in the energy future from across the world's most influential markets, and establish industrial collaborations.

Fig. 24. OET at IDTechEx Printed Electronics Europe 2018.

Intersolar 2018 Munich Germany

OET has participated to the Intersolar Europe 2018 that took place at 20-22 June 2018 at Munich, Germany with an exhibition booth to disseminate its results on In-Line Metrology for OE devices manufacturing.

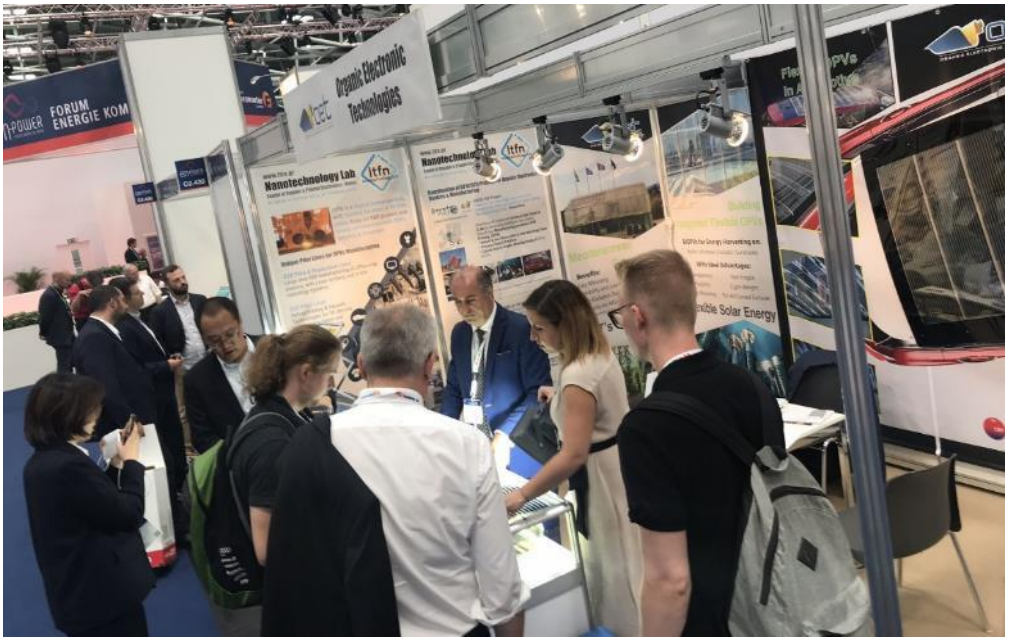

Fig. 25. Participation of OET with an exhibition booth at the Intersolar Europe 2018

NANOTEXNOLOGY 2018 EXPO, 30/6-7/7/2018, Thessaloniki, Greece

OET has participated at the NANOTEXNOLOGY EXPO 2018, 2-6 July to promote its activities within the SmartLine project.

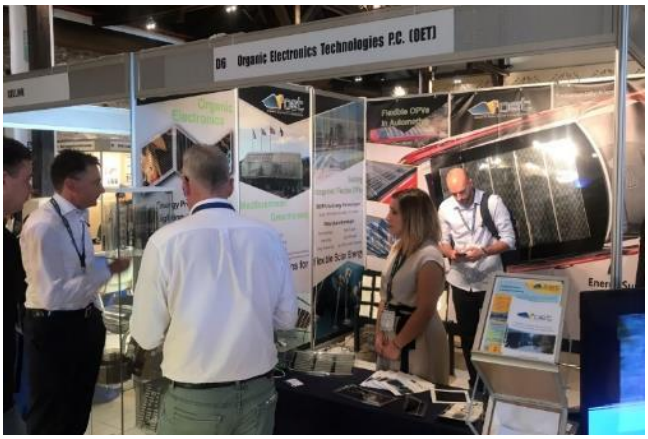

Fig. 26. Participation of OET at the NANOTEXNOLGOY 2018 EXPO
(photo shows Mr. V. Matskos from OET and N. Li Pira from CRF

9th International Conference on Flexible and Printed Electronics – ICFPE

OET has participated at the 9th International Conference on Flexible and Printed Electronics, Grand Metropark Universal Dinosaur Town Hotel in Changzhou, China, September 25-28, 2018.

OET's CEO Mr. V.Matskos held the company's presentation "**Tailored Fully Printed OPVs and OLEDs for Mass Market Entry: Towards Industry 4.0**". Specifically, the aim of the travel was to promote Smartline activities at Asia (M6-M12) under the umbrella of "Connections with Academic, Research and Industrial members worldwide" and Connection with Industrial entities worldwide.

Fig. 27. Participation of representatives from OET (V. Matskos) and AUTh (A. Laskarakis) at the ICFPE 2018.

3.2.3. IBS

IBS presented the WSI at the 25th Anniversary Event. In this event, 150 international attendees from Precision Engineering and Metrology Community (Industry and Academia) have participated.

Fig. 28. WSI Demonstrator 25th Anniversary Event

3.2.4. CRF

CRF presented an Invited oral presentation at the Automotive Surfaces 2017 Conference, which took place at Berlin, Germany at 30/11-1/12/2017. This event was organized by CRAIN Global Polymer Group and it had 19 speakers from the industry. The event hosted more than 120 participants from industry. Dr. Luca Belfore from CRF presented the CRF activities in automotive and decorative materials and presented the activities of the SmartLine project.

Fig. 29. Automotive Surfaces 2017 Conference

Also, CRF presented an Invited oral presentation at the Prinse 2018 event, which took place at Oulu Finland at 31/1-1/2/2018. This event was organized by PrintoCent and it had 50 speakers from the industry. The event hosted more than 200 participants from industry. Dr. Luca Belfore presented the CRF activities in printed electronics and presented the activities of the SmartLine project.

Finally, Marie Marguerite Dugand from CRF presented the SmartLine project at the Luce Imaging Microscopia Spettri event that took place at 17-19 May 2018 at ENEA, with more than 50 participants from R&D Institutes and companies.

3.2.5. SUR

SUR has participated with oral presentation and booth at the Printed Electronics Europe 2018 (11-12/4//2018, Berlin, Germany) and with an exhibition booth at the Printed Electronics USA 2018 (14-15/11/2018, Santa Clara, USA).

3.2.6. LayTec

Laytec is proceeding to further dissemination activities which will be included in the continuous reporting data.

3.2.7. AIXTRON/APEVA

AIXTRON has been in contact with many potential customers and has had intense discussions with them on the most recent developments in OVPD deposition processes and equipment. We have performed demonstrations of our deposition process technology with numerous partners and customers.

AIXTRON presented a talk on “Organic Vapor Phase Deposition (OVPD) of OLED for Organic Display and Lighting Applications” at the OLED TECH SUMMIT, 25.-26.10.2018 Berlin.

3.3. Scientific Publications

The following table shows the announcements from the partners in public media to promote their activities within SmartLine.

Table 4. List of scientific publications

Partner	Title
IBS	**Air bearings for precision manufacturing systems** Theresa Spaan-Burke Mikroniek, Professional Journal on Precision Engineering Vol. 58, Issue 2 Dutch Society for Precision Engineering Netherlands (2018) 10-14, ISSN: 0026-3699

3.4. Collaborations with other Projects

Among the dissemination plan of SmartLine, there is the connection with other projects with relevant objectives and activities in order to establish a continuous link with them, in the following areas:

• Bi-lateral discussions between participants of SmartLine in order to develop a common understanding of potential synergies in the relevant fields

• Exchange of technical information in order to identify the common areas of R&D for which both SmartLine and other projects have interest and mutual benefit

• Organization of joint events preferably in parallel with other conferences in areas of mutual interest

• Common participation in conferences/workshops in order to inform the wider scientific community about the key outputs and planned activities of the projects

During the 1st Reporting Period, the consortium identified the H2020 EU project CORNET (https://www.cornet-project.eu/).

The activities of SmartLine in the development of novel in-line metrology tools and methodologies for the manufacturing of OE devices are complemented by the activities of CORNET, which are focused on the development of an Open Innovation Environment for the optimization of the manufacturing for OPVs, OLEDs and PPVs by R2R and OVPD processes. CORNET is coordinated by AUTh (SmartLine coordinator), and the consortium includes some of the SmartLine partners (OET, CRF, AIXTRON). This opens the way for the acceleration of the activities of SmartLine in the fabrication of OPV and OLED devices of specific efficiency and lifetime values. The results from the samples fabricated in SmartLine can be correlated with information from complementary modelling and characterization that will be performed by the CORNET partners, which will establish specific correlations between the process parameters and the final properties of the OE devices. The information from the SmartLine metrology tools will play a major role since it will provide in-depth information of the potential variations of the optical, electrical, structural properties of the materials and devices during their manufacturing.

Also, within the 1st reporting period, the 2 projects have co-organized specific events, such as the the 9th Workshop – Flexible & Printed Electronics Industry: Targeting the Digital Transformation that took place at Athens, Greece at 22 October 2018.

3.5. Participations in Networks, Clusters and Associations

The SmartLine project was represented (Prof. S. Logothetidis, Dr. A. Laskarakis) at the Meeting of the Zero Defect Manufacturing Sub-platform, at 5 October 2017 in Brussels, after the invitation of the EC Project Officer. In this event, discussions took place with the representatives from Manufuture and the Zero Defect Manufacturing Sub-platform to combine its activities with the
Brussels October 5. 2017

Fig. 30. Participation of the SmartLine project representatives (Prof. S. Logothetidis, Dr. A. Laskarakis) at the Meeting of the Zero Defect Manufacturing Sub-platform, at 5 October 2017 in Brussels.

Moreover, the SmartLine has participated to the EFFRA (European Factories of the Future Research Association (EFFRA), and the project is registered to the EFFRA Innovation Portal to increase the visibility of the project and its activities in the industrial communities.

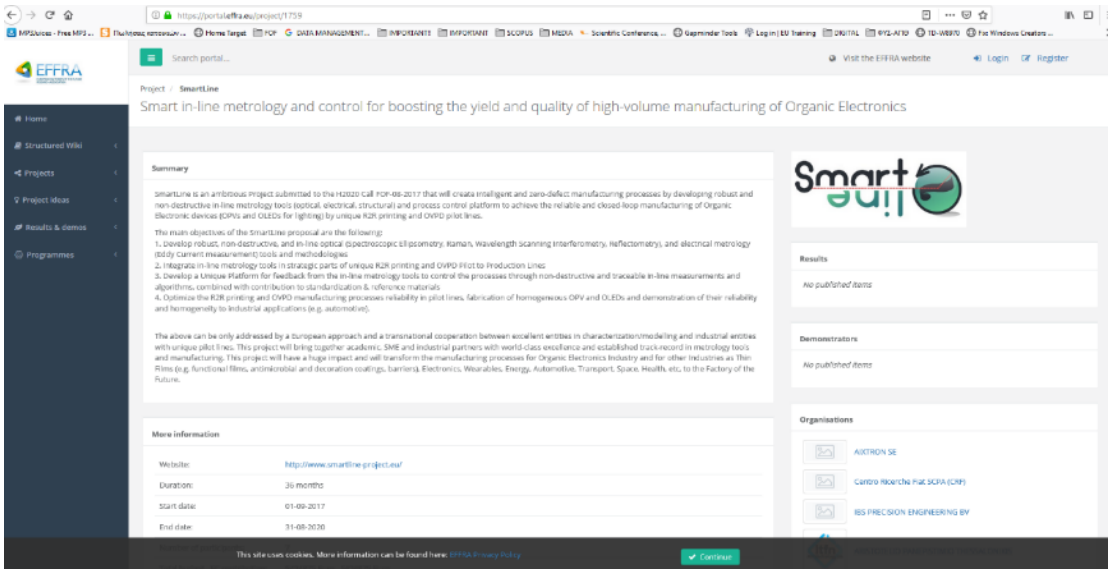

Fig. 31. SmartLine page in the EFFRA Innovation Portal.

3.6. Public Website

The SmartLine partners have announced the project and its activities in their corporate websites. These are included in the following list:

Partner	SmartLine links to corporate website
OET	http://oe-technologies.com/index.php/news/ http://oe-technologies.com/index.php/category/news/events/ http://oe-technologies.com/index.php/category/news/press/
AUTh	http://ltfn.physics.auth.gr/index.php/research/r-d-projects/active-projects
IBS	http://www.ibspe.com/page/rend.htm
LayTec	https://www.laytec.de/solutions/advanced-rd/
AIXTRON	
SUR	
CRF	

3.7. Public Media

3.7.1. Public Media

The following table shows the announcements from the partners in public media to promote their activities within SmartLine.

Table 5. List of partners activities in public media

Partner	Activity	Title	Link
AUTh	On-Line article	Το ΑΠΘ μαζί με Fiat και ευρωπαϊκές εταιρείες στο πρόγραμμα SmartLine 2 October 2017	https://www.voria.gr/article/to-apth-ke-to-ergostasio-tou-mellontos-sta-organika-ilektronika
AUTh	On-Line article	Smart in-line metrology and control for boosting the yield and quality of high-volume manufacturing of Organic Electronics	https://cordis.europa.eu/project/rcn/211339/factsheet/en
OET	Magazine Article	Researchers hit new efficiency landmark for single-junction OPV cells June 05, 2018	https://nano-magazine.com/news/2018/6/5/researchers-hit-new-efficiency-landmark-for-single-junction-opv-cells?fbclid=IwAR3f0Y0pzuL477MOhT8AqQdTRKiyhtOg3Qm2xmk7J66wSYvEJJRl7OqXvNo
OET	Magazine Article	Greek researchers hit new efficiency landmark for single-junction OPV cells June 5, 2018	https://www.pv-magazine.com/2018/06/05/greek-researchers-hit-new-efficiency-landmark-for-single-junction-opv-cells/
OET	Magazine Article	Greek researchers hit new efficiency landmark for single-junction OPV cells June 5, 2018	https://www.pv-magazine.com/2018/06/05/greek-researchers-hit-new-efficiency-landmark-for-single-junction-opv-cells/
OET	Newletter Article	OET researchers achieve 7.4% efficiency for single structure fully printed organic photovoltaic - a new world record 22 Feb 2019	http://www.osadirect.com/news/article/2205/oet-researchers-achieve-74-efficiency-for-single-structure-fully-printed-organic-photovoltaic-a-new-world-record/?fbclid=IwAR3dJS4UoaprJNzkSIg9lnQSldiF4ZuLWPuTprgWbwMJzHFG6UDYq1EPEHk
OET	Press Release	Printed solar cell set to transform electronics manufacturing	https://cordis.europa.eu/news/rcn/129999_en.html?WT.mc_id=exp
IBS	On-Line News	Air Bearings –Unexpected Encounters. News piece regarding	

		Journal Article “Air Bearings for Precision Manufacturing Systems”	

3.7.2. Press Conferences

AUTh has announced to the regional and national media the start of the SmartLine project activities at a Press Conference that took place at its premises at the Center for Organic & Printed Electronics at Thessaloniki, Greece at 2 October 2017.

Fig. 32. Press Conference for the start of the SmartLine project

3.7.3. SmartLine Brochure

SmartLine Brochure

The partners have prepared the SmartLine brochure for the distribution to interested entities and individuals during the dissemination activities. This is available in the SmartLine website for download and use (News & Media/Downloads)

Fig. 33. SmartLine brochure

3.7.3. SmartLine Public Presentation

The public presentation for the Smartline Project has been prepared by AUTh and uploaded at the Smartline website's secured area, in the downloads path, for use from the partners (in both PDF and PPT format). In the following, the public presentation slides are presented. This is presented at the SmartLine Deliverable 2.1.

Fig. 34. SmartLine public presentation for the partners to use for dissemination purposes

3.8. Internal Communication Activities

The partners organize a Consortium Meeting that takes place every 6 months to meet and discuss about the project innovations, arrangements, potential challenges, and collaborative actions to reach its ambitious targets. The following Consortium meetings took place in the 1st Reporting Period.

SMARTLINE Kickoff Meeting

Fig. 35. SmartLine Project Kick-off meeting, on September 15th 2017 at Brussels

SmartLine's 6th month Consortium Meeting has been successfully completed which took place at LayTec's facilities, in Berlin, on April 13th 2018, with participation of AUTh, CRF, LayTec, Aixtron, IBS, Suragus and OET.

Fig. 36. SmartLine M6 Consortium Meeting at LayTec facilities at Berlin, Germany

SmartLine's 12th month Consortium Meeting took place at Divani Caravel Hotel, in Athens, on October 23rd 2018, with participation of AUTh, CRF, LayTec, Aixtron, IBS, Suragus and OET.

Fig. 37. SmartLine M12 Consortium Meeting at Athens, Greece

4. Statistics

The following figure shows an overview of the dissemination and communication activities of all partners during the 1st Reporting Period.

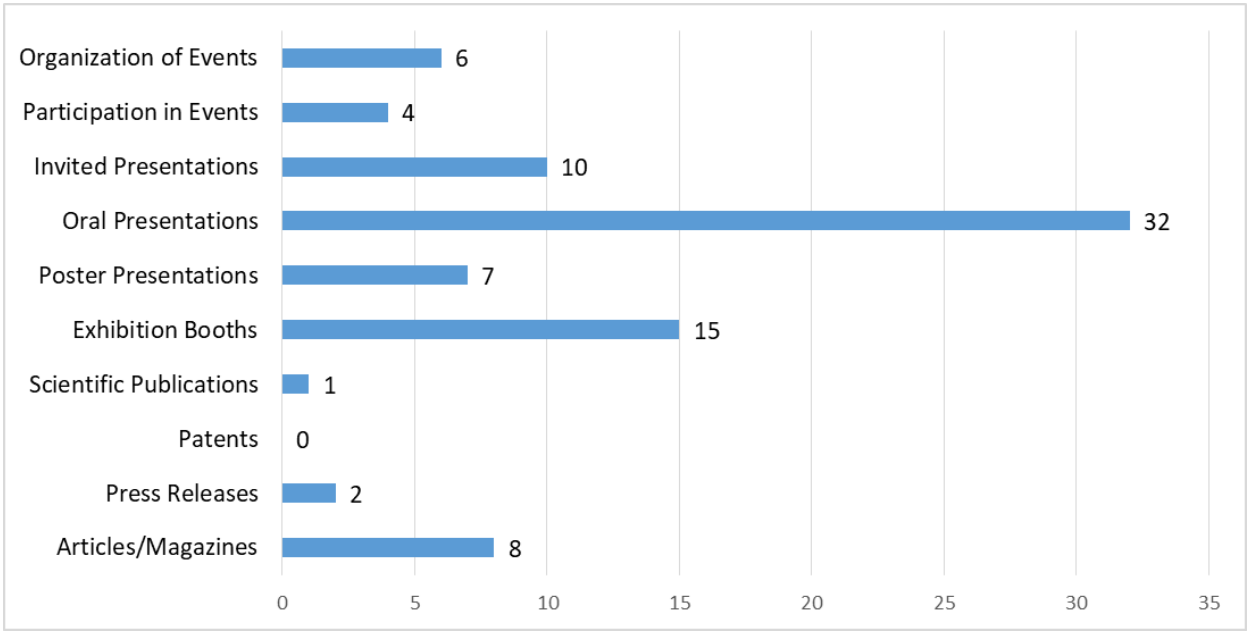

Fig. 38. SmartLine dissemination and communication statistics

5. Conclusions

This deliverable outlined the SmartLine dissemination strategy and the activities for the 1st Reporting Period (September 2017-February 2019) of the project. The deliverable provides a detailed description of the activities both internally and externally undertaken in order to increase the project's visibility and its research output.

The partners were very active in the dissemination of the project activities and its results by organization and participation in international events (conferences, workshops, exhibitions, etc.) as well as on the connections with stakeholders from the academic, research and mainly industrial communities, networks, associations, other projects and clusters. A very active visibility in social media is also evident.

According to the SmartLine workplan, the partners have developed the in-line metrology tools and methodologies and currently the activities are focused on the integration of these tools in the pilot lines for the optimization of the manufacturing for OPVs and OLEDs by R2R printing and OVPD processes.

As such, we anticipate a large number of scientific publications, and presentations in international events, exceeding our goals in each dissemination. Finally, the partners are expected to exploit the project results through patents, which will take place at the next reporting period.