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## Newsletter 5

### M3DLoC Project - General Status:

M3DLoC project is targeting to develop a hybrid manufacturing process, by combining Additive Manufacturing and inkjet printing with micro-milling and laser processing, in an integrated, modular pilot line, with advanced in-line inspection technologies. This integrated approach allows to link flexible micro-fabrication and multi-material integration, aiming to address current challenges in point-of-care testing molecular diagnostics. The heart of the project is the Pilot Line established at the Lavrion Technical and Cultural Park. Bespoke process systems from project partners have been incorporated into this pilot line and complemented by hardware and software system for fully automated production of microfluidic devices.

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*Additive Manufacturing of 3D Microfluidic MEMS for Lab- on-a-Chip applications*

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### Pilot Line Integration Status:

Systems have been delivered, commissioned and integrated on the LTCP Pilot Line Site. Hardware and software integration has been implemented and the pilot line is capable of operating and be automatically controlled by the master production PC, utilising the custom software developed for the M3DLoC project. The devices are carried and handled by a robotic system, utilising a custom-built gripper and carrier setup, specifically designed for the needs of our project.



## M3DLoC Project

Additive Manufacturing of 3D Microfluidic MEMS for Lab-on-a-Chip applications

M3DLoC aims at the employment of multi-material 3D printing technologies for the large-scale fabrication of microfluidic MEMS for lab-on-a-chip and sensing applications. The concept is based on the combination of multimaterial direct-ink-writing method and an extrusion-based 3D printing pilot line, in order to fabricate microstructured detection devices with the ability to perform all steps of chemical analysis in an automated fashion

### Exposure and H&S Measurements

Airborne particle exposure measurements are being performed by IRES in the pilot line premises, throughout its development, in support of occupational safety.



### M3DLoC Project EXPO

The M3DLoC Project has a newly created virtual EXPO site on the project website. The EXPO can be visited through the following link: [www.m3dloc.eu/EXPO](http://www.m3dloc.eu/EXPO).

Each partner has been given a virtual exhibition booth with links directing to the following subpages: About us (information on the organisation), Products and Services, and Contact (with a fillable contact form).



## PARTNERS

National Technical  
University of Athens -  
NTUA

University of Limerick  
Universidade de Aveiro

AltraTech Limited

Cambridge  
Nanomaterials  
Technology Ltd

University of  
Strathclyde

RayScan Technologies  
GmbH

Avanzare Innovación  
Tecnológica SL

VITO

IRES

M-SOLV

Fraunhofer ILT

BioG3D

Microliquid S.L.

PolyPico Technologies  
Ltd

ELVESYS SAS

NTUA-AMDC - Lavrion  
Technological and  
Cultural Park

Joanneum Research -  
Health



## News

### Participation in the Smartfan Conference – 8-9 December 2021

On December 8th and 9th, 2021, the SMARTFAN project organized the Final Conference on Smart and intelligent composite structures for innovative industrial applications, which took place at the facilities of the Lavrion Technological & Cultural Park. The event aimed at the proclamation of knowledge and sharing new ideas among academic scientists, researchers, engineers and other stakeholders from research area of nanotechnology and composite materials. The event also included, in addition to the technical presentations and the program, lectures and presentations by renowned researchers and industries in the field. In the same place, on December 10th, 2021, there has also been the Workshop, where as part of it a tour of the facilities with different groups of visitors was undertaken. The NTUA team presented the **M3DLoC** project, the pilot line and its capabilities.



## Contact Us

### Project coordination:

Prof. Costas A. Charitidis

National Technical  
University of Athens –  
NTUA, Greece

Email:

coordinator@m3dloc.eu

### Exploitation and Dissemination Management

Dr Bojan Boskovic

Cambridge  
Nanomaterials  
Technology – CNT Ltd.

Email: info@m3dloc.eu



### M3DLoC had a visit from Greek Minister of Internal Affairs

On the 9th of November 2021, the **Greek Minister of Internal Affairs Makis Voridis** visited the facilities of the **Lavrion Technological & Cultural Park** and the **M3DLoC pilot line**. The team from NTUA explained to him the project, the pilot line and it's capabilities. He then proceeded to visit the other R-Nano facilities at LTCP.



This project is supported by the European Union under the HORIZON2020 Framework Programme Grant Agreement no. 760662. The contents of this newsletter are the sole responsibility of the parties and cannot be considered as reflecting the position of the European Union.