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An OLED pilot line introduces itself: From PI-SCALE to LYTEUS

Flexible OLED light - a dream comes true for many product designers! The PI-SCALE project (project number: 688093) funded by the European Commission has been successfully completed.

In order to evaluate the successful development of the H2020 project PI-SCALE and its final results, a review meeting together with representatives of the European Commission took place in Eindhoven on September 11th, 2019. One of the results was the announcement of the continuation of the pilot line service for flexible organic light emitting diodes (OLED) under the lead of the Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP. The OLED pilot line service continues under the name LYTEUS. In order to promote this and to present the services offered by LYTEUS, the consortium invites potential industrial customers to a workshop on November 7, 2019, in Dresden/Germany.

Within the framework of the PI-SCALE project funded by the European Commission, the leading European research institutes Fraunhofer FEP, VTT, Holst Centre/TNO and CPI together with industrial partners Audi, REHAU, Pilkington and EMDE were able to set up the pilot line service for flexible organic light-emitting diodes (OLEDs) LYTEUS. LYTEUS is able to supply industrial companies with customized flexible OLED lighting modules and supports the development of new innovative products.

Together with their industrial partners, the institutes were able to achieve unique results, create and manufacture fascinating prototypes based on the flexible OLED technology. In a one-day workshop on November 7, 2019, interested parties can now experience the offer of the LYTEUS pilot line service on site at Fraunhofer FEP and discuss it with the partners. The industrial partners of PI-SCALE will also present their impressive applications and the research partners will inform you in detail about the range of services of LYTEUS. Experts will be available to discuss ideas.

The Fraunhofer FEP, with its ten years of experience and the resulting know-how in the production of OLEDs for lighting applications, functions as one of the core partners of the PI-SCALE consortium. PI-SCALE aimed at the production and integration of flexible OLEDs at system level by creating a worldwide leading Open Access pilot line. With the help of the project it was possible to build a bridge between the development of novel and innovative products and the possibility of bringing these technologies from the laboratory to the market. In order to achieve the objectives of the project and to develop the functionality of the pilot line service, partners along the entire value chain



The project PI-SCALE has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 688093.



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- from material suppliers to end users - were represented in the consortium.

World's longest OLED strip

Freeform, ultra-thin, multicolor, transparent and flexible - these are the attributes that distinguish the innovative OLED technology. Within the PI-SCALE project and by establishing the OLED pilot line service LYTEUS, the world's longest OLED strip in roll-to-roll was created (see Fig. 1). In total, more than ten different demonstrators could be built in cooperation with the partners of the consortium. In addition to the world's longest OLED strip, also the world's largest OLED demonstrator (see Fig. 2) with the dimensions of 30 cm x 180 cm. As an area light source, the fields of application for OLEDs are almost inexhaustible. Whether automotive, security, lighting in general, light design engineering, interior design, furniture, aviation or architecture: dimmable OLEDs with variable colors offer almost unlimited creative freedom (see Fig. 4). Together with EMDE development of light GmbH, for example, the first flexible OLED integrated into a motorcycle jacket was developed (see Fig. 3). This use in garments can open up new possibilities in the field of aesthetics and design. In addition, OLED lighting elements in motorcycle clothing improve the visibility of their users and thus increase road safety.

Claudia Keibler-Willner, Project Manager and Head of Department Sheet-to-Sheet Organic Technology at Fraunhofer FEP, explains: "With the establishment of the LYTEUS pilot line service, we have taken a major step forward in the further development of economical manufacturing processes for flexible OLEDs. With LYTEUS, we can bridge the gap between research and mass production and offer custom OLED solutions. LYTEUS was developed in the now completed PI-SCALE project and is coordinated by Fraunhofer FEP and supported by Holst Centre/TNO, VTT and CPI. The result is impressive: among other things, we were able to manufacture highly efficient OLED modules that are the longest in the world. The use of the roll-to-roll process also promises a significant reduction in the cost of future components."

The project partners thank the European Commission for its support of the project.

ABOUT PI-SCALE:

The project was funded within the Horizon 2020 Research and Innovation Programme of the European Union with the FKZ No. 688093.

Further information: www.pi-scale.eu and www.lyteus.eu.

Budget: 14 Mio. €

Duration: 01.01.2016 – 30.06.2019

Project consortium PI-SCALE:

TNO (Netherlands Organisation for Applied Scientific Research) Holst Centre www.holstcentre.com	Netherlands
Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP www.fep.fraunhofer.de/en	Germany
VTT Technical Research Centre of Finland Ltd. www.vtresearch.com	Finland
CPI www.uk-cpi.com	United Kingdom
M-Solv www.m-solv.com	United Kingdom
FlexEnable www.flexenable.com	United Kingdom
DuPont Teijin Films www.europe.duponttejinfilms.com	United Kingdom
Brabant Development Agency www.bom.nl	Netherlands
AUDI AG www.audi.com	Germany
EMDE development of light GmbH www.emdegmbh.com	Germany
REHAU AG & Co. www.rehau.com	Germany
Pilkington Technology Management Ltd. www.pilkington.com	United Kingdom
Coatema Coating Machinery GmbH www.coatema.de	Germany
Amires s.r.o. www.amires.eu	Czech Republic

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Logos of project partners

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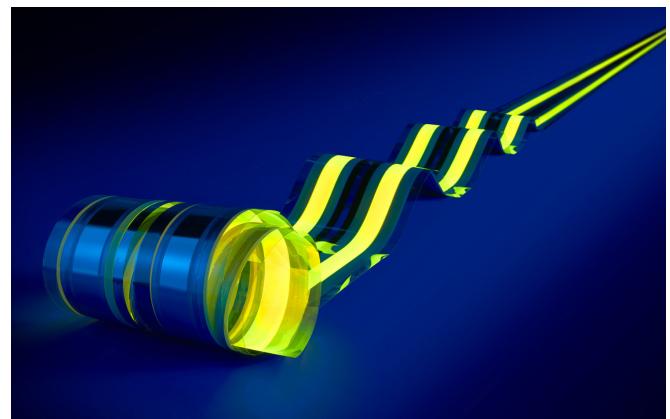


Fig. 1: World's longest OLED strip, manufactured with hybrid technology in roll-to-roll process, length: 15 m

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Fig. 2: World's largest OLED demonstrator – 30 cm x 180 cm

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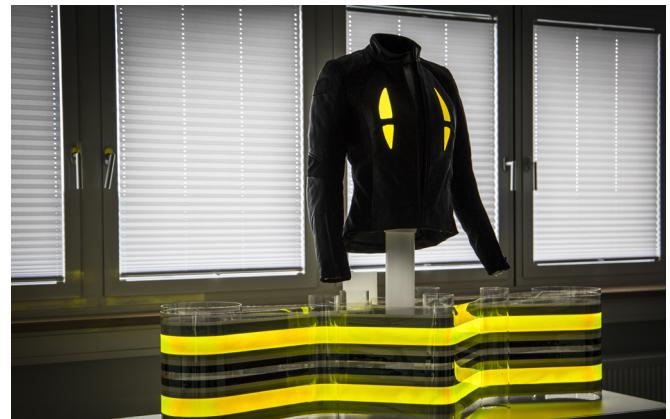


Fig. 3: Motorcycle jacket with integrated flexible OLED

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Fig. 4: Bendable design luminaire OMLED Wing

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