

THE MONTHLY LIST

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LIST AND MET-LUX TO DEVELOP NEW TRANSPARENT AND FLEXIBLE PACKAGING

The Luxembourg Institute of Science and Technology (LIST) and MET-LUX have agreed to develop, by 2021, a new thin, flexible and transparent gas permeation barrier coated on a polymer foil to provide transparent and flexible food packaging for products that will be manufactured in the future.

On 21 September 2018, LIST and MET-LUX signed a three-year collaboration agreement. As part of the “Transparent gas permeation barrier on polymer foils for packaging and flexible electronics” (TRANSPERBAR) research project funded by the Luxembourg National Research Fund, the two partners agree to develop, by May 2021, new packaging solutions combining optical transparency and a controlled permeation rate. They will also focus on improving the preservation properties of transparent food packaging using a new light-transparent and gas-impermeable coating technique.

Indeed, the food and drink packaging markets are increasingly looking for flexible and transparent packaging solutions that maintain, in particular, the preservation properties, hygienic conditions, and flavours of their contents. Although consumers prefer transparent packaging in order to see what they are buying, transparent and flexible packaging currently has many limitations. These include humidity and oxygen penetrating its interior and affecting the shelf life of food, and even, in some cases, having a negative impact on food.

LIST and MET-LUX, both with solid experience in the field of polymer foil metallization for packaging, are thus joining forces to develop a coating technique to provide transparent flexible polymer films with the same preservation features as aluminium opaque packaging. While MET-LUX provides metal coatings on polymer foil for applications in packaging, LIST researchers, specializing in transparent and optically-tunable electronics, have, in other research, been able to identify solutions and develop low-temperature coating techniques that are compatible with polymer films.

The innovative coating technique that the partners hope to develop could thus be applied by MET-LUX to its production lines, at the end of the project, bringing added value to its existing products and offering competitive benefits to some of its future products. Collaboration with LIST could therefore allow MET-LUX to expand its product range and be at the forefront of market needs. Better yet, by paving the way for new applications, such as flexible electronics, some of the explored approaches could help MET-LUX to rank among the major players in this sector over the next decade. [Learn more at www.list.lu/project/transperbar](http://www.list.lu/project/transperbar)

Photo, from left to right: Richard Nakath (FNR), Michele Luppi (MET-LUX), Fernand Reing (LIST) and Damien Lenoble (LIST)

OTHER HIGHLIGHTS



Luxembourg

LIST AND IVV CONDUCT RESEARCH IN LUXEMBOURG VINEYARDS

At the “Weinbergsbegehung”, the annual visit of the test vineyard organized by the Wine Institute (IVV) for winegrowers in Luxembourg, LIST presented its research work with the IVV. Together, they are conducting a series of research projects focusing on vines: pests and diseases affecting vineyards in Luxembourg and the reduction of pesticide use. In the test vineyard, LIST has identified a natural compound capable of combatting the spotted wing drosophila (*Drosophila suzukii*), the effectiveness of which will be tested in real conditions from 2019. LIST already uses various remote-sensing technologies to identify signs of mildew. The benefits of the technology for detecting and monitoring the symptoms of esca will be evaluated in 2019. [Learn more at www.list.lu](http://www.list.lu)

Business

LIST GEOSYNCHRONOUS RADAR TECHNOLOGY IN THE RACE FOR ESA'S TENTH EARTH EXPLORER MISSION

In late September, the European Space Agency (ESA) announced the three Earth Explorer ideas accepted by the ESA's Programme Board for Earth Observation (EO) that are in the running to be part of the tenth Earth Explorer mission. Among them is the Geosynchronous-Continental Land-Atmosphere Sensing System (G-CLASS), developed by LIST researchers. Designed to help scientists unravel details of the daily water cycle, the geosynchronous radar will monitor processes on timescales of less than a day, which have, up to now, been poorly observed from space.

[Learn more at www.list.lu](http://www.list.lu)



Scientific excellence

RTOS AND UNIVERSITIES, THE SUBJECT OF A PAPER PUBLISHED IN “RESEARCH POLICY”

LIST digital innovation researcher Pierre-Jean Barlatier, has co-authored a paper in Research Policy, a major scientific journal in the field of economics and innovation management. Co-written with the University of Strasbourg, France, the article is entitled “Same but different? Research and technology organizations, universities and the innovation activities of firms”. In the article, the authors highlighted that the role of RTOs in open and networked innovation systems cannot be considered the same as the role of universities and that policy-makers should acknowledge the differences and possible complementarities between RTOs and universities. Such conclusions confirm and reinforce the overall positioning of LIST, Luxembourg's only Research and Technology Organization. [Learn more at www.list.lu](http://www.list.lu)



Industry

LIST AND POLYgone COLLABORATE TO OPTIMIZE SORTING CENTRES FOR CONSTRUCTION

LIST and the Luxembourgish company Polygone are designing a technological solution to optimize the management of waste sorting centres for construction sites, a practice currently carried out in a non-automated way. Thanks to the collaborative research project OCTogone, they will focus on the development of a tool for the automated, tailor-made and optimized design of waste sorting centres. With the first version of the prototype already demonstrating significant potential for reducing work time, as well as increased competitiveness and precision in answering customers' needs, the partners foresee bright prospects ahead. [Learn more at www.list.lu](http://www.list.lu)



WHERE TOMORROW BEGINS

Located at the heart of Belval's Research & Innovation Campus, LIST can easily connect its 600-plus specialists in materials, environment and IT, including its many PhD students, through a broad range of joint research projects, programmes and partnerships with virtually all of Luxembourg's other major research players. At Belval, the University of Luxembourg, LIH, LISER, Technoport, Luxinnovation and the Luxembourg National Research Fund are all within arm's reach.

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