

Adhesive Film Will Be Antimicrobial

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From bed rails, tray tables, telephones and alarm buttons to furnishings, door handles or taps: **hospitals** are hotbeds for **bacteria**, which can lead to **life-threatening infections** in fragile patients.

The EU project **FLEXPOL** brings together a consortium of research and industry partners from Italy, Spain, Portugal, United Kingdom and Germany to develop a pilot line for cost-efficient antimicrobial adhesive film manufacturing. These films are applied to large-area surfaces around patients in order to reduce the risk of contamination. The synergic action of material and surface structure is able to **kill various germs and inhibit bacterial growth** with an efficiency of 99.9 percent – this will not only ensure the health protection of both patients and medical staff but also yield a considerable economic benefit due to reduced expenditures for detergents and sanitizers.

The idea of the project is to apply these films to large areas such as walls and floors and thus extensively minimize a contamination with microbes in hospitals, but not only. Certainly the ambition to expand the market to food packaging is already on-going aiming to preserve and extend the shelf life of fruit, meat and processed food, among others.

This is achieved by **specially developed nanostructures** and polymer materials **containing antimicrobial oil blends**: applying these structures to adhesive films in a roll-to-roll process makes it difficult for bacteria and fungal spores to cling to them, as the structures mechanically damage the cell envelope and thus kill the pathogen.

Within the project, the Italian SME Propagroup S.p.A, operating in packaging market for more than 50 years, will deal with the high-volume film production, implementing a dedicated blow extrusion line and supporting the consortium in material design and formulation. Scientific excellence as University of Alicante, University of Minho and the company Naturality, in conjunction with sound research centers as Fraunhofer IPT and IK4-Tekniker, dedicate their effort on active substance development, efficiency enhancement both on chemical and technological point of view.

The project has a three-years duration, starting in January 2017 and concluding in December 2019. As a part of the funding program **Horizon 2020**, the project is supported by the European Commission with a budget of 5.17 million euros at a total budget of **5.68 million euros**.