Antipathogenic Touchscreen Polymer Films

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About 4 million people per year acquire health associated infections (HAIs) in Europe. Antipathogenic films can help to reduce transmission of HAIs. The SanFlex project develops an antipathogenic film coated with a superacid catalytic material intended as protective cover films on touchscreens, containing only benign materials.The project lays the foundation for roll-to-roll production of antipathogenic biopolymer protection films for touchscreens and beyond.

The antipathogenic action of the films is realized by acidifying a titania coating, which is synthesized by a low temperature strategy using high-power impulse magnetron sputtering to grow crystalline-seed precursor films, followed by Flash Lamp Annealing (FLA) for further crystallization. Reactive gas-phase photo-fixation has been demonstrated to achieve bonding of sulphate groups on the crystalline surfaces. The process strategy is compatible with the growth of low-cost polymers. The FLA technology exhibits inline capability enabling large area production.

The socio-technical assessment ensures that user needs and healthcare processes as well as market demand and the competitive landscape are considered. It also considers ethical and social implications of the technology. The ecological assessment reveals contributions to the overall environmental impact across the life-cycle of the technology, with a special focus on the materials used and identifying further improvement. In the talk we will provide technical details how we have realized the antipathogenic films. In the poster presented at this conference we present a general overview of the project, including stakeholder and user-perspectives.

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