

Slippery Anti-Fouling Coatings on Flexible Catheters

Spray-coated Slippery Liquid-Infused Porous Surfaces (SLIPS) to reduce systemic infections and biofilm formation



David Lynn

- Professor in Chemical and Biological Engineering
- 300+ publications, 13+ issued patent

Market:

The global catheters coatings market is projected to be \$1.52 billion by 2026 with 6.5% CAGR. Overall, 250,000 catheter-related infections occur annually in the U.S. alone, and costs per infection can be as high as \$56,000.

Technology:

This novel polymer-based SLIPS inhibits microbial adhesion and promotes the sustained release of conventional antimicrobial agents. The SLIPS is fabricated by spray-coating reactive/covalent layer-by-layer assembly to allow coating topologically complex objects, including the inner and outer surfaces of flexible polymer tubing and provide matrix for loading pharmaceutical agents.

IP and Stage:

2 issued patents, 2 pending. Spray coating optimization for manufacturing. Biofilm resistance and sustained drug release up to 120 Days in flow and simulated bio-fluids. Robust coating after Ethylene oxide sterilization, different storage conditions, and 500 flexing and bending cycles.

Impact:

This technology allows a new class of SLIPs to be deposited onto challenging surfaces, such as catheters and other flexible tubes, to prevent microbial colonization. The SLIPS coatings, drug loading, and sustained drug delivery can reduce systemic infections and biofilm formation caused by pathogens in indwelling catheters.

Ask:

Introductions to industry contacts developing catheter or liquid handling technologies

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