

27075 Promoting cell adhesion to surfaces

The Technology

A research group at the University of Sheffield have developed a unique water-based coating system that can be used to impart adhesion and proliferation of human cells to materials that were previously poorly adherent. e.g. a non-cell adhesive poly (glycolide-co-lactide) (polygalactin 910) mesh was made cell adhesive. The system has been used to convert non-cell adhesive materials into substrates for cell culture that can out-perform commercially available tissue culture substrates.

The production method produces a latex (an aqueous nanodispersion of polymer particles with diameters in the 50 – 800 nm range) which is an ideal form for coating medical devices using the already established spraying and dipping procedures. A schematic of the coating process is shown in figure 1.

The coating process can be optimized for any material by formulation of the oligomer's monomer composition.

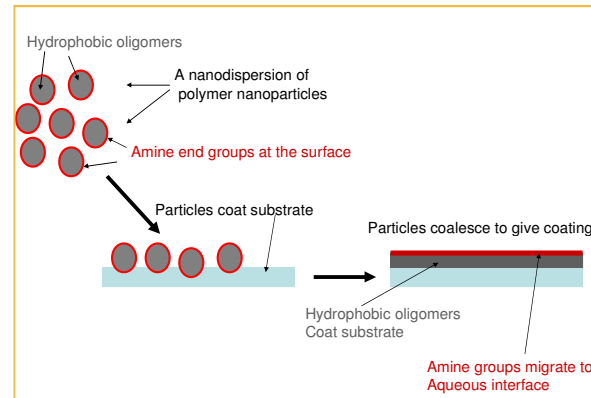


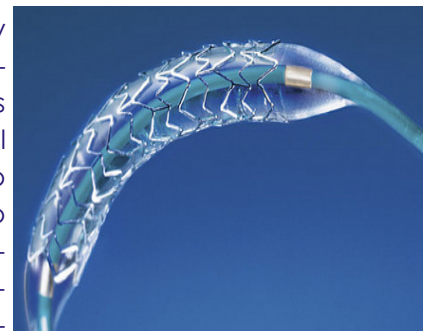
Figure 1 Coating of a substrate with an oligomer-amine latex

Intellectual Property

A patent application has been filed that covers various aspects of this technology and its possible applications.

The Opportunity

The potential market for this coating technology is in any procedure that requires or could benefit from cell adhesion to clinically implanted devices. As examples of this we suggest coronary stents (to support endothelial cell growth when implanted in vivo) and the coating of hip implants and orthopaedic implants and screws (to help in bone growth onto the implant as well as coating surgical repair materials and wound dressings). We are currently seeking licensees to realise the commercial potential of this technology.



For commercial enquiries on this technology, please contact Andrew Tingey, quoting reference 27075.

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