

Case Study

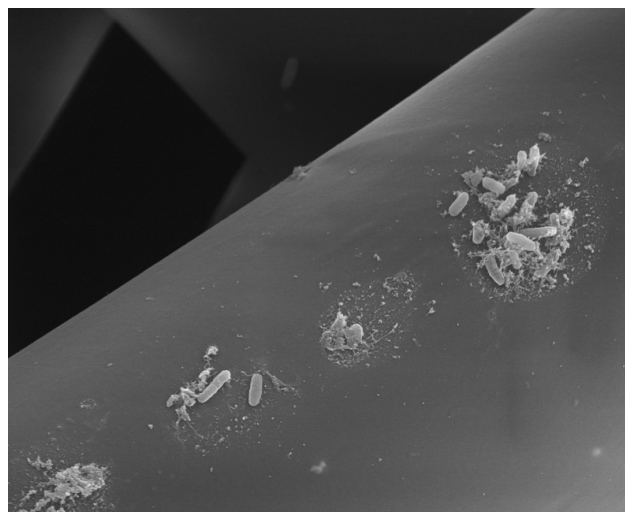
INNOVATIVE WOUND CARE

Helping industry find academic partners to explore new applications for a known technology

Two major clinical challenges in the treatment of chronic wounds are the management of wound exudate and the effective treatment of biofilm-related infections. Wound dressings are available to absorb exudate from highly exuding wounds and to treat wound biofilm infections; however, there is no commercially available single product, which collectively addresses both issues. To treat infected wounds with high levels of exudate a clinician currently uses two dressings; an anti-microbial dressing and a dressing to manage high exudate levels.

A Proof of Concept (POC) award from NBIC enabled researchers at the University of Manchester, Dr Gurdeep Singh and Professor Andrew McBain to work with Dr Helen Thomason, then Head of Scientific Research for Crawford Healthcare. Crawford Healthcare is a rapidly growing leader in developing innovative wound care and dermatological treatments and was acquired in 2018 by the world's largest wound care company, Acelity L.P. Inc.

The main aim of the project was to assess the anti-biofilm efficacy of combining an antimicrobial dressing with a wound dressing, capable of absorbing high levels of exudate, to facilitate the treatment of wound infection and to manage exudate with a single treatment. The project was highly successful, meeting all major aims, and a manuscript is currently in preparation.



Investigating the ability of super absorbent wound dressings to internalise and transfer bacteria. The image shows a section of a dressing imaged with Scanning Electron Microscopy.

Science-based technology company 3M completed the acquisition of Acelity L.P. Inc. and its KCI subsidiaries in 2019. NBIC has recently supported the Dr Gurdeep Singh, Professor Andrew McBain and Dr Helen Thomason team to conduct further work on innovative wound care approaches, this time with 3M as the industrial partner.

The main aim of the research is to develop an *in vivo* wound model to assess the effects of biofilm formation and anti-biofilm dressings on single-cell spray-on skin therapy to promote healing. Spray-on skin therapy is a novel and effective way to promote healing of wounds such as burns and venous and diabetic foot ulcers.



Professor Andrew McBain, Principal Investigator

Professor Andrew McBain studied for his PhD in Medical Microbiology at the University of Cambridge with the Medical Research Council. Since 1999, his research at Manchester has focused on the responses of biofilms to antimicrobial treatments and the interaction of microorganisms colonising the skin, nasopharynx, oral cavity and intestine with the human host in health and disease.