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Local thermal actuation of material surfaces via micro- and nanowire heating for the prevention of cellular attachment and biological fouling

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Technology Summary

In many cases antibiotic therapy proves difficult or ineffective due either to microbial antibiotic resistance or to the formation of a biofilm on the device that resists penetration of the antibiotic. On-demand in situ techniques for actively disrupting infection/fouling, aside from systemic antibiotic treatment, are virtually non-existent. Here we describe A new application of micro- and nanowire technologies to facilitate localized thermal actuation of material surfaces that can be used to prevent early stage protein adsorption and cellular attachment associated with infection and biofilm formation is described.

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