

Abstract Submitted
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Spatial response variations within biosensor flow cells NICOLA CANT, SARAH HARRISON, Dstl — Biosensors are currently being developed for the detection of a wide range of analytes in a variety of scenarios. One such area is that of environmental monitoring for the presence of biological threats, from toxins through to viruses and bacteria. The varying nature, and in particular disparate size, of such a variety of analytes poses a significant challenge in the development of effective high confidence instruments. Many existing biosensors employ functionalised flow cells in which spatially defined arrays of surface immobilised recognition elements are present to specifically capture their analyte of interest. Experimental data obtained using a grating coupled SPR instrument, the BIAcoreTM Flexchip, has revealed spatial dependency differences in response behaviours between proteinaceous and particulate analytes. In particular, the magnitude of responses seen with *Bacillus anthracis* spores across the instruments flow cell appear to be influenced by shear and gravitational effects whilst those from soluble proteins are more uniform. We have explored this dependence to understand its fundamental impact on the successful implementation of multi-analyte environmental biological detection systems.

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