

Separation Dynamics of DNA Molecules within Microdevices

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Hello,

I am writing to respectfully submit an abstract for the upcoming HPCE conference in Sweeden from April 14 - April 18 2002. Please let me know if there is any other information I need to supply. Thank you for your help.

Title: Separation Dynamics of DNA within Microdevices
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The flexibility of the microfabricated format creates unique opportunities for study of the electrophoretic process. This understanding is essential to the design of all electrophoresis apparati including electrophoretic microdevices. The present work utilizes digital images to capture the motion of DNA samples during loading and injection. A systematic study of strong sample stacking (sample concentration effects) was performed in order to analyze realistic DNA analysis conditions within microdevices. These effects are shown to be highly useful and can be separately enhanced using high-voltage injection. The sample profiles within the injector have been analyzed by deconvolving the geometrical sample profile into different velocity groups. This analysis illustrates the evolution of molecular separation into distinct migrating populations within the injector itself. The present study performed DNA injections within microfabricated devices imposing run voltages between 85 V/cm - 850 V/cm. Data from 3 different offset lengths of a double-T cross-injector, 10 different applied voltages, and 2 different sample preparation protocols are presented.