

Comet Assay Automation for DNA Testing *by*

Patrick Vega | Joseph Dray | Chris Sanchez | Michael Jantz | Nicholas Noda | Pratik Shah

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Abstract Details

Single cell gel electrophoresis, also known as comet assay, is a process used to study the formation and repair of DNA damage. Comet assay is gaining popularity as industry and academic institutions begin to use the process more for single cell analysis. Some of the limiting factors to Comet Assay's increased implementation is its' low sample throughput, inherent inaccuracy, inconsistency due to human error, inaccurate temperature control, and laboratories' long sample workup procedure. In order to increase the effectiveness of comet assay, it is necessary to achieve accurate temperature control and remove human intrusion in the process while maintaining consistent results. We are addressing these needs by creating a device that automates the entire process of Comet Assay up until scoring. Automation will remove the need for human intervention in the process, and will allow for consistent and accurate temperature control as well as the prevention of light contamination. All of this will lead to a more reliable outcome in the experiments, while allowing lab employees to be more efficient by eliminating the need for supervision and constant attendance in the long and tedious process. This automated approach is a significant advancement in Comet Assay experimentation.

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Author Information

Author: Patrick Vega | Joseph Dray | Chris Sanchez | Michael Jantz | Nicholas Noda | Pratik Shah

Email: pvega008@fiu.edu, jdray002@fiu.edu, csanc047@fiu.edu, mjant003@fiu.edu, nnoda004@fiu.edu, pshah003@fiu.edu

Affiliation: MEMS group, MEMS group, MEMS group, MEMS group, MEMS group, MEMS group

Presenter Information

Presenter: Joseph Dray

Email: jdray002@fiu.edu

Preference: Poster