

CLAIMS

1. A method for recovering off scale data in an image produced by a camera in a capillary electrophoresis instrument, the method comprising:
 - identifying bins of the image where electron counts produce a signal greater than a maximum camera signal;
 - setting an off-scale flag for the identified bins; and
 - processing the image to obtain a recovered dye signal, based on the flag set for each bin, and using a dye matrix.
2. The method of claim 1, further comprising:
 - changing a binning pattern of the camera, wherein the changing comprises reducing a size of one or more camera bins.
3. The method of claim 1, wherein processing the image further comprises:
 - setting to zero any coefficient of the dye matrix corresponding to bins that have been flagged as off-scale;
 - calculating a modified pseudoinverse dye matrix; and
 - calculating the recovered dye signal using the modified pseudoinverse dye matrix.
4. A non-transitory computer-readable storage medium, the computer-readable storage medium including instructions that when executed by a computer, cause the computer to:
 - identify bins of an image where electron counts produce a signal greater than a maximum camera signal;
 - set an off-scale flag for the identified bins; and
 - process the image to obtain a recovered dye signal, based on the flag set for each bin, and using a dye matrix.
5. The non-transitory computer-readable storage medium of claim 4, wherein the computer-readable storage medium further includes instructions that when executed by the computer, cause

the computer to change a binning pattern of the camera, wherein the change comprises reducing a size of one or more camera bins.

6. The non-transitory computer-readable storage medium of claim 4, wherein the computer-readable storage medium further includes instructions that when executed by the computer, cause the computer to:

- set to zero any coefficient of the dye matrix corresponding to bins that have been flagged as off-scale;

- calculate a modified pseudoinverse dye matrix; and

- calculate the recovered dye signal using the modified pseudoinverse dye matrix.

7. A biological analysis device for performing capillary electrophoresis, comprising:
a camera configured to detect emission from a sample and produce an image;
a processor; and
a memory storing instructions that, when executed by the processor, configure the device to:

- identify bins of the image where electron counts produce a signal greater than a maximum camera signal;

- set an off-scale flag for the identified bins; and

- process the image to obtain a recovered dye signal, based on the flag set for each bin, and using a dye matrix.

8. The biological analysis device of claim 7, wherein the instructions stored in the memory further configure the device to change a binning pattern of the camera, wherein the change comprises reducing a size of one or more camera bins.

9. The biological analysis device of claim 7, wherein the instructions stored in the memory further configure the device to:

set to zero any coefficient of the dye matrix corresponding to bins that have been flagged as off-scale;

calculate a modified pseudoinverse dye matrix; and

calculate the recovered dye signal using the modified pseudoinverse dye matrix.