

WHAT IS CLAIMED IS:

1. A pixel information output method of an image sensor, the image sensor comprising a photosensitive unit array, a filter cell array, and a micro-lens array, the
5 filter cell array being located between the photosensitive unit array and the micro-lens array, the photosensitive unit array comprising a plurality of photosensitive units, the filter cell array comprising a plurality of filter cells, the micro-lens array comprising a plurality of micro-lenses, each micro-lens covering a corresponding filter cell and a corresponding photosensitive unit, each photosensitive unit comprising a plurality of
10 photosensitive pixels, the method comprising the following steps of:
determining an output mode according to a mode selection instruction;
controlling exposure of the photosensitive unit array;
reading outputs of the photosensitive unit array;
controlling pixel information of the plurality of photosensitive pixels of a same
15 photosensitive unit to be combined to be output when the output mode is a first output mode; and
controlling the pixel information of the plurality of photosensitive pixels of the same photosensitive unit to be individually output when the output mode is a second output mode,
20 distinguishing imaging light to obtain phase difference information according to the pixel information of the plurality of photosensitive pixels of the photosensitive unit, and adjusting phase focusing according to the phase difference information.
2. An imaging device, comprising:
25 an image sensor comprising a photosensitive unit array, a filter cell array, and a micro-lens array, the filter cell array being located between the photosensitive unit array and the micro-lens array, the photosensitive unit array comprising a plurality of photosensitive units, the filter cell array comprising a plurality of filter cells, the micro-lens array comprising a plurality of micro-lenses, each micro-lens covering a

corresponding filter cell and a corresponding photosensitive unit, each photosensitive unit comprising a plurality of photosensitive pixels;

a processor; and

a computer-readable storage medium storing a program to be executed by the processor, the program comprising instructions for:

determining an output mode according to a mode selection instruction;

controlling exposure of the photosensitive unit array of the image sensor;

reading outputs of the photosensitive unit array;

controlling pixel information of the plurality of photosensitive pixels of a same photosensitive unit to be combined to be output when the output mode is a first output mode; and

controlling the pixel information of the plurality of photosensitive pixels of the same photosensitive unit to be individually output when the output mode is a second output mode, distinguishing imaging light to obtain phase difference information according to the pixel information of the plurality of photosensitive pixels of the photosensitive unit, and adjusting phase focusing according to the phase difference information.

3. The imaging device of claim 2, wherein each photosensitive unit comprises 2*2 photosensitive pixels.

4. The imaging device of claim 2, wherein the filter cell array comprises a Bayer array.

5. The imaging device of claim 2, wherein the program further comprises instructions for:

adding the outputs of the plurality of photosensitive pixels of the same photosensitive unit to obtain a pixel value of the photosensitive unit, thereby producing a merged image.

6. The imaging device of claim 5, wherein the program further comprises instructions for:

converting analog signal outputs of the photosensitive pixels into digital signal outputs.

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7. The imaging device of claim 2, wherein each photosensitive unit comprises 2×2 photosensitive pixels, the image sensor comprises a register, and the program further comprises instructions for:

gathering and storing the outputs of the photosensitive pixels of rows k and $k+1$ into the register, wherein $k=2n-1$, n is a natural number, $k+1$ is less than or equal to the total row of the photosensitive pixels; and

extracting the outputs of the photosensitive pixels of rows k and $k+1$ from the register, and adding the outputs of the photosensitive pixels of the same photosensitive unit to obtain a pixel value of the photosensitive unit.

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8. The imaging device of claim 7, wherein the program further comprises instructions for:

converting analog signal outputs of the photosensitive pixels into digital signal outputs.

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9. A terminal comprising a housing and an imaging device positioned in the housing, the imaging device comprising:

an image sensor comprising a photosensitive unit array, a filter cell array, and a micro-lens array, the filter cell array being located between the photosensitive unit array and the micro-lens array, the photosensitive unit array comprising a plurality of photosensitive units, the filter cell array comprising a plurality of filter cells, the micro-lens array comprising a plurality of micro-lenses, each micro-lens covering a corresponding filter cell and a corresponding photosensitive unit, each photosensitive unit comprising a plurality of photosensitive pixels;

a processor; and

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a computer-readable storage medium storing a program to be executed by the processor, the program comprising instructions for:

determining an output mode according to a mode selection instruction;

controlling exposure of the photosensitive unit array of the image sensor;

5 reading outputs of the photosensitive unit array;

controlling pixel information of the plurality of photosensitive pixels of a same photosensitive unit to be combined to be output when the output mode is a first output mode; and

10 controlling the pixel information of the plurality of photosensitive pixels of the same photosensitive unit to be individually output when the output mode is a second output mode,

distinguishing imaging light to obtain phase difference information according to the pixel information of the plurality of photosensitive pixels of the photosensitive unit, and adjusting phase focusing according to the phase difference information.

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10. The terminal of claim 9, wherein each photosensitive unit comprises 2*2 photosensitive pixels.

11. The terminal of claim 9, wherein the filter cell array comprises a Bayer
20 array.

12. The terminal of claim 9, wherein the program further comprises instructions for:

25 adding the outputs of the plurality of photosensitive pixels of the same photosensitive unit to obtain a pixel value of the photosensitive unit, thereby producing a merged image.

13. The terminal of claim 12, wherein the program further comprises instructions for:

converting analog signal outputs of the photosensitive pixels into digital signal outputs.

14. The terminal of claim 9, wherein each photosensitive unit comprises 2*2
5 photosensitive pixels, the image sensor comprises a register, and the program further comprises instructions for:

gathering and storing the outputs of the photosensitive pixels of rows k and $k+1$ into the register, wherein $k=2n-1$, n is a natural number, $k+1$ is less than or equal to the total row of the photosensitive pixels; and

10 extracting the outputs of the photosensitive pixels of rows k and $k+1$ from the register, and adding the outputs of the photosensitive pixels of the same photosensitive unit to obtain a pixel value of the photosensitive unit.