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(54) **High dynamic range sensor with blooming drain**

(57) An image sensor has at least two photodiodes in each unit pixel. A high dynamic range is achieved by selecting different exposure times for the photodiodes. Additionally, blooming is reduced. The readout timing cycle is chosen so that the short exposure time photodiodes act as drains for excess charge overflowing from the long exposure time photodiodes. To improve draining of excess charge, the arrangement of photodiodes may be further selected so that long exposure time photodiodes are neighbored along vertical and horizontal directions by short exposure time photodiodes. A micro-lens array may also be provided in which light is preferentially coupled to the long exposure time photodiodes to improve sensitivity.

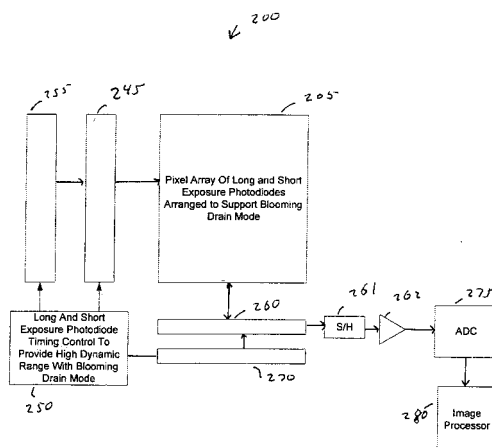


Fig. 2