

A Novel Multi-output Buck-Boost POL Architecture for Power Supply on Chip

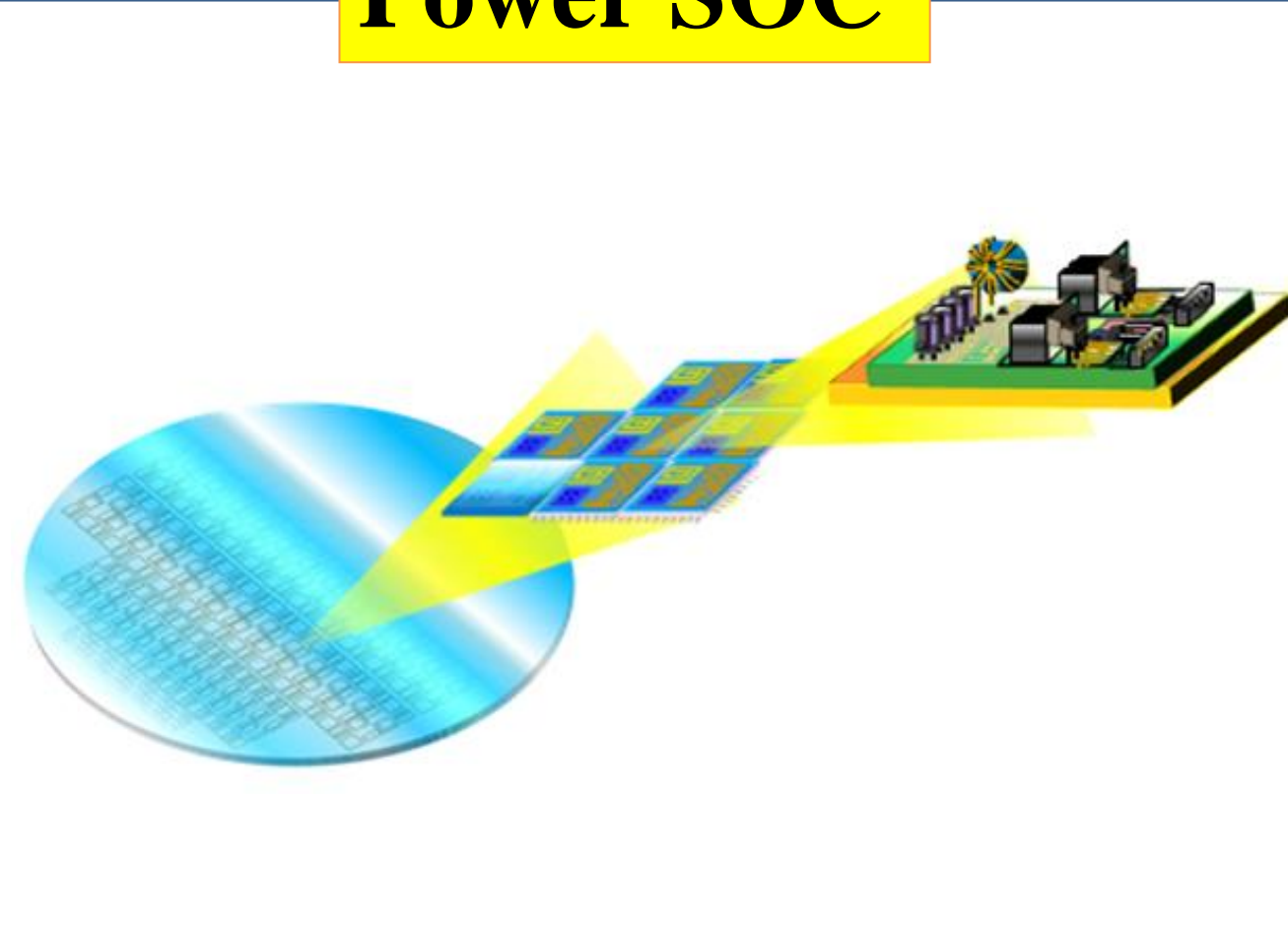
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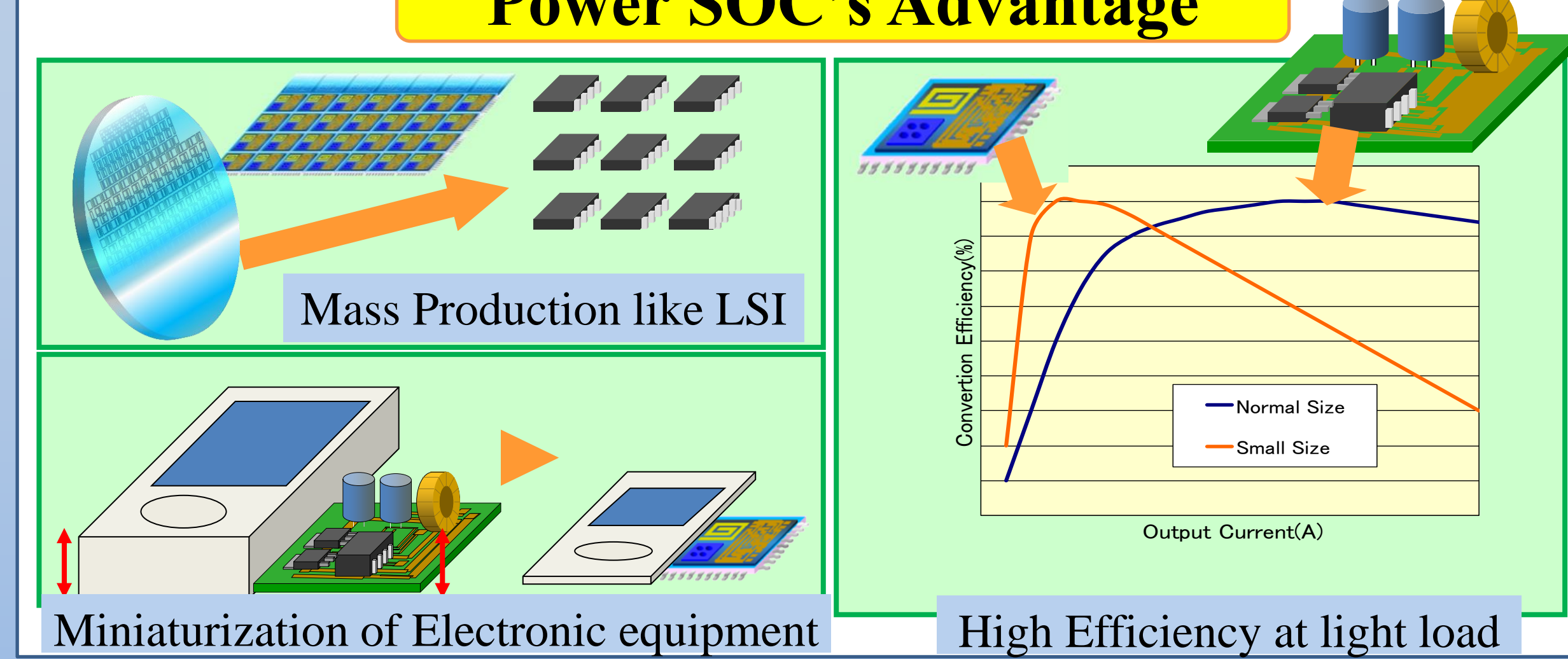


Introduction

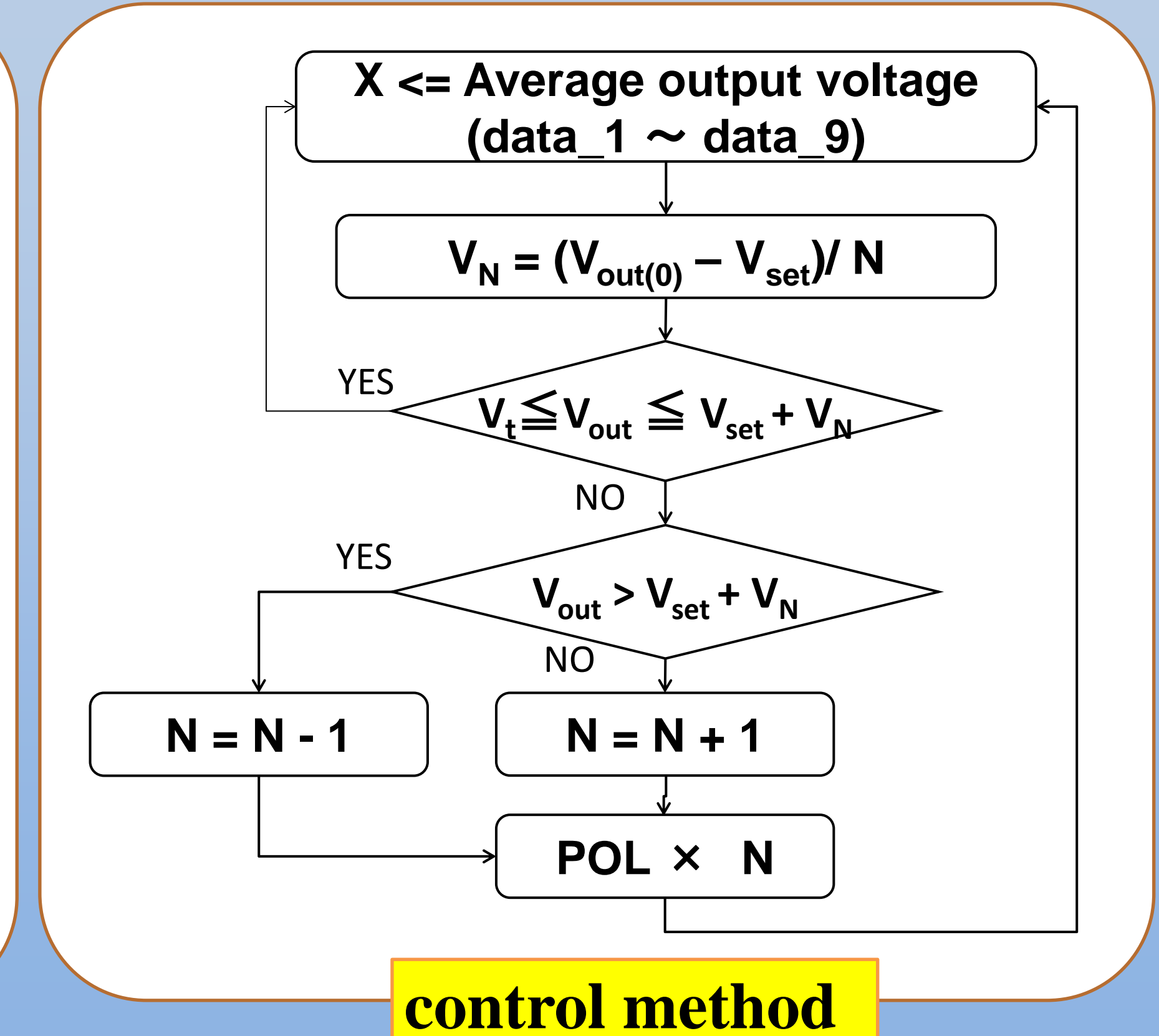
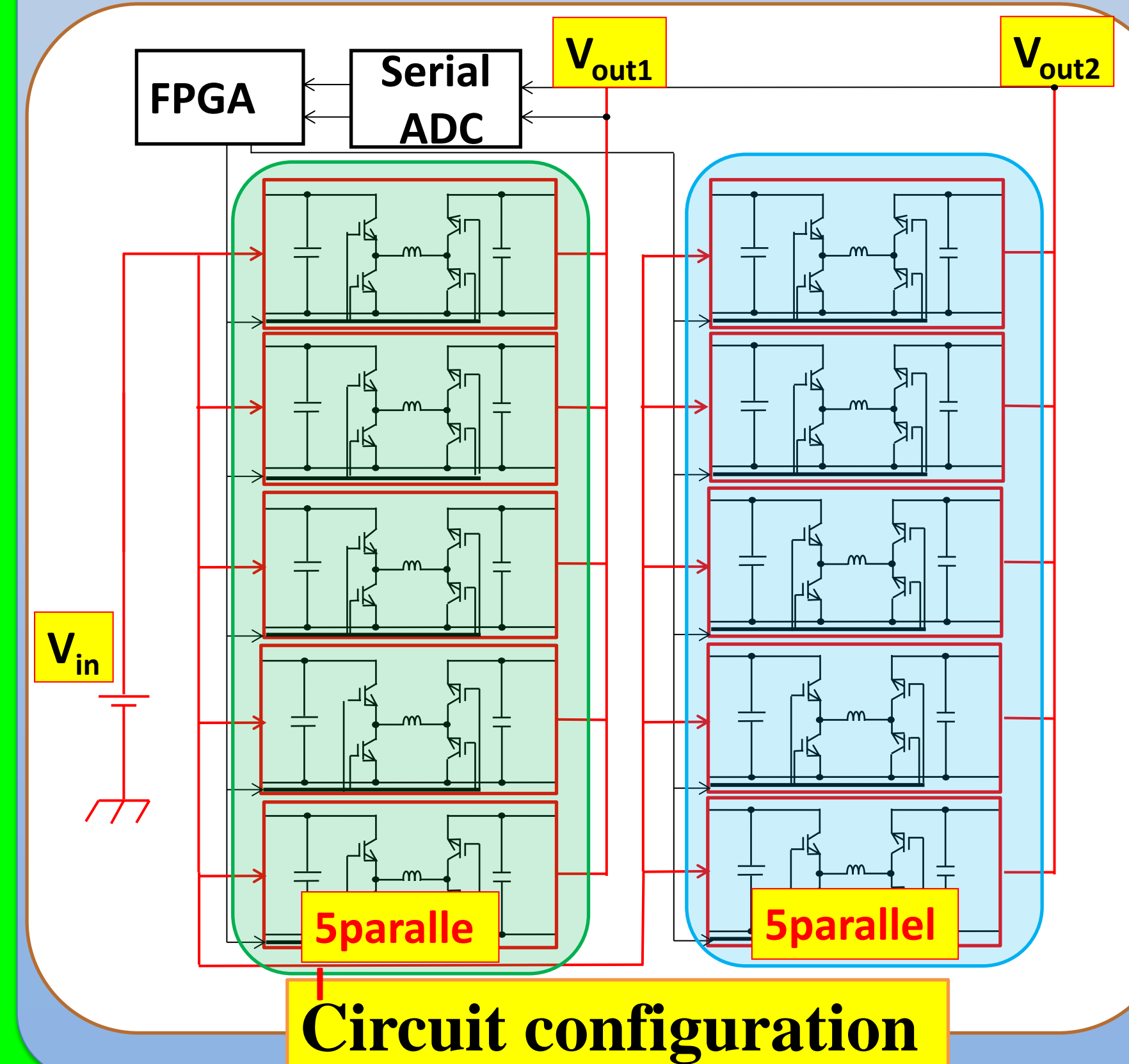
Power SOC



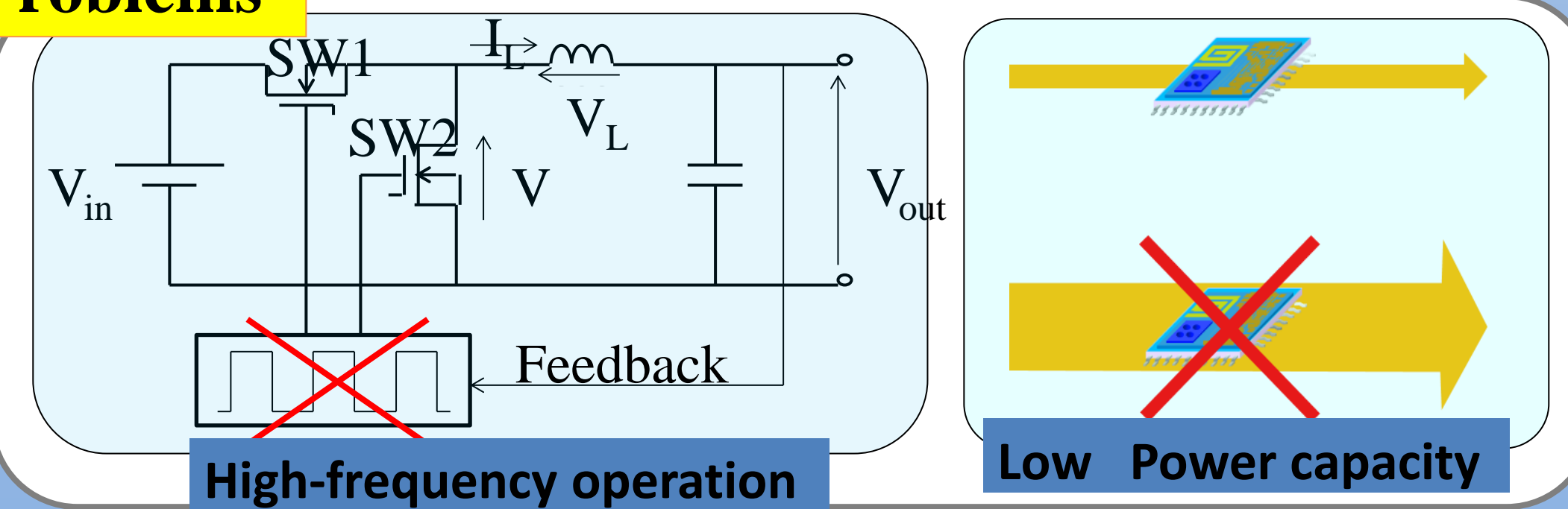
Power SOC's Advantage



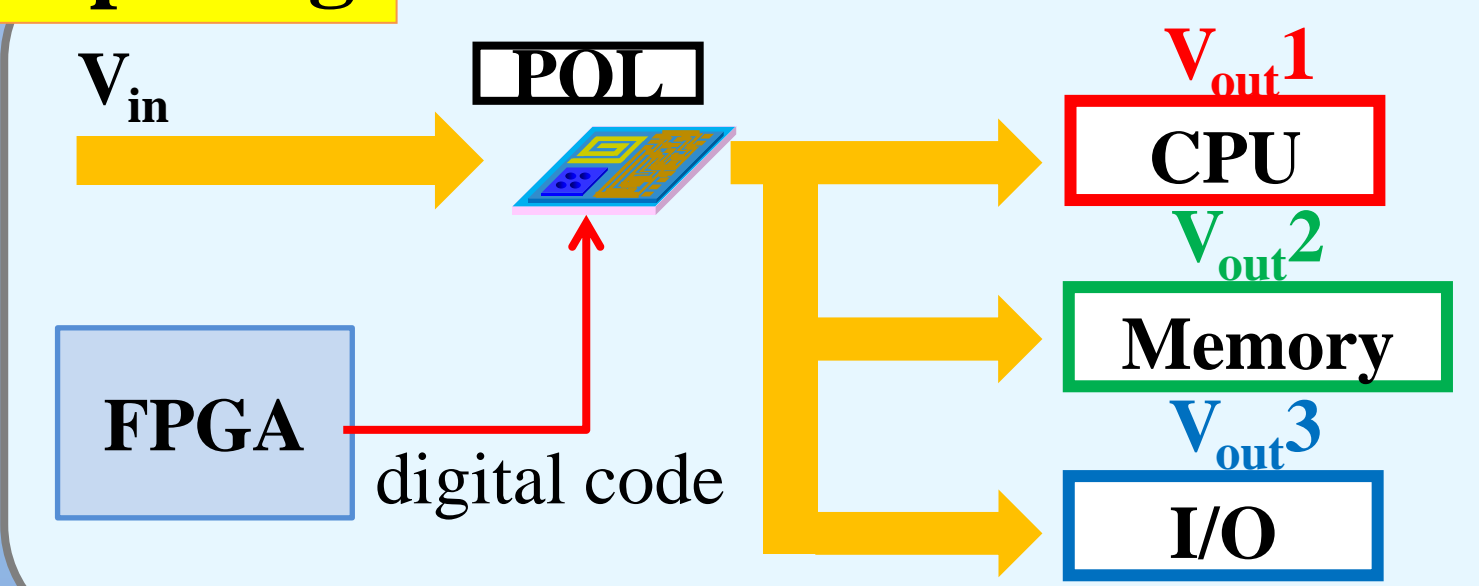
Circuit configuration and control method



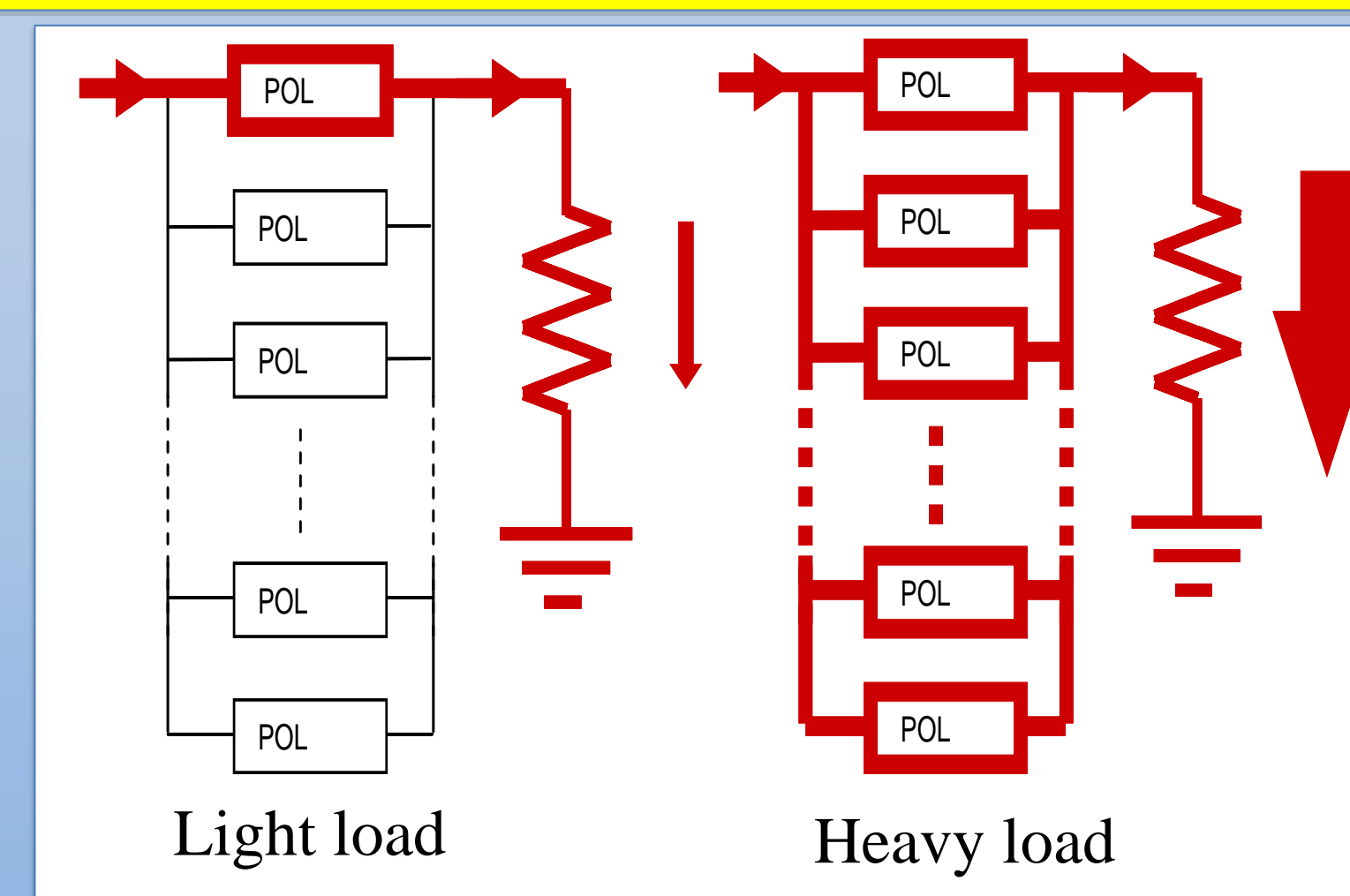
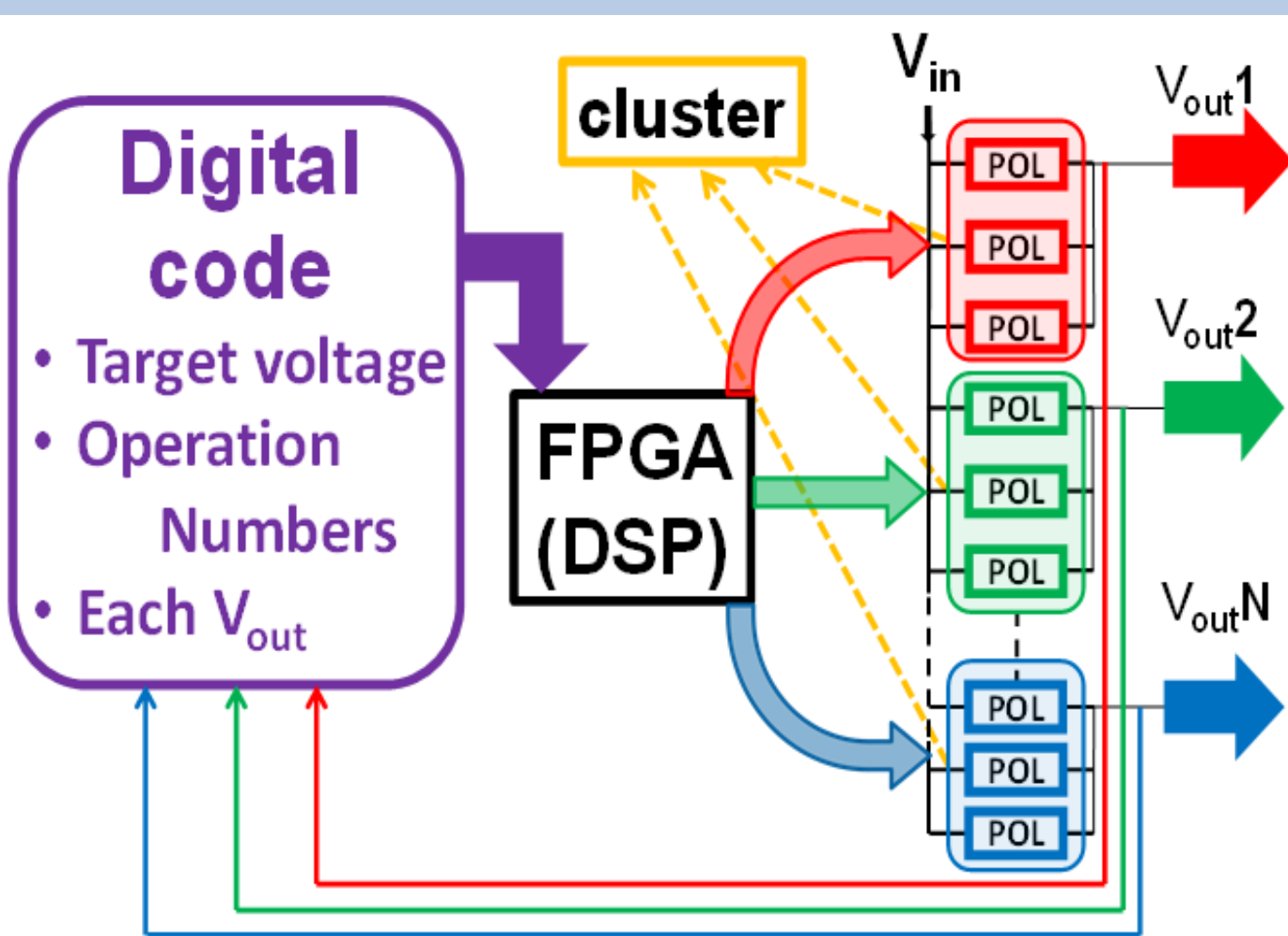
Problems



Proposing



Block diagram and Control method



$$V_{out} = D \cdot V_{in} - \frac{r}{N} I$$

(Buck Converter)

$$V_{out} = \frac{1}{D} V_{in} - \frac{r}{N} I$$

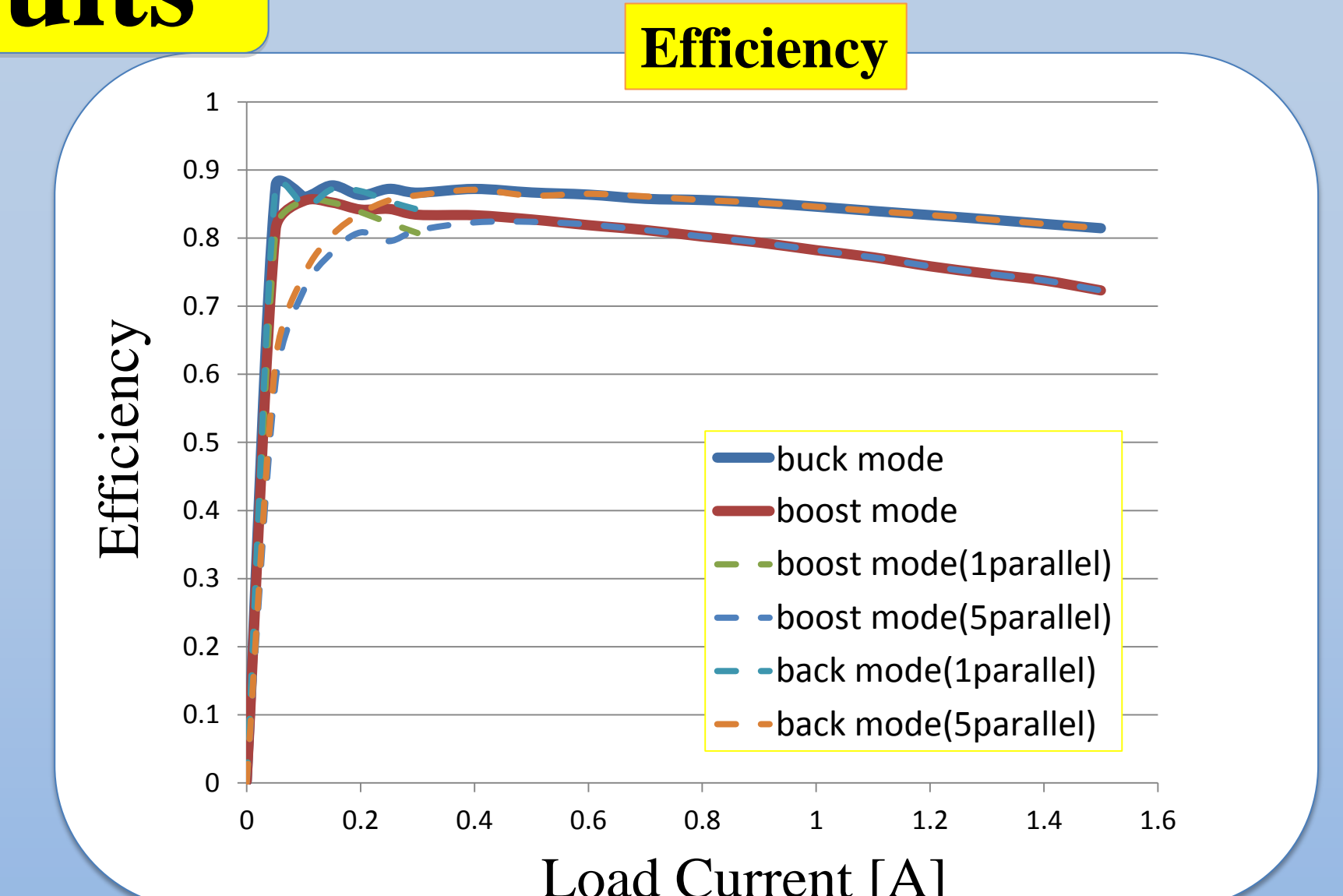
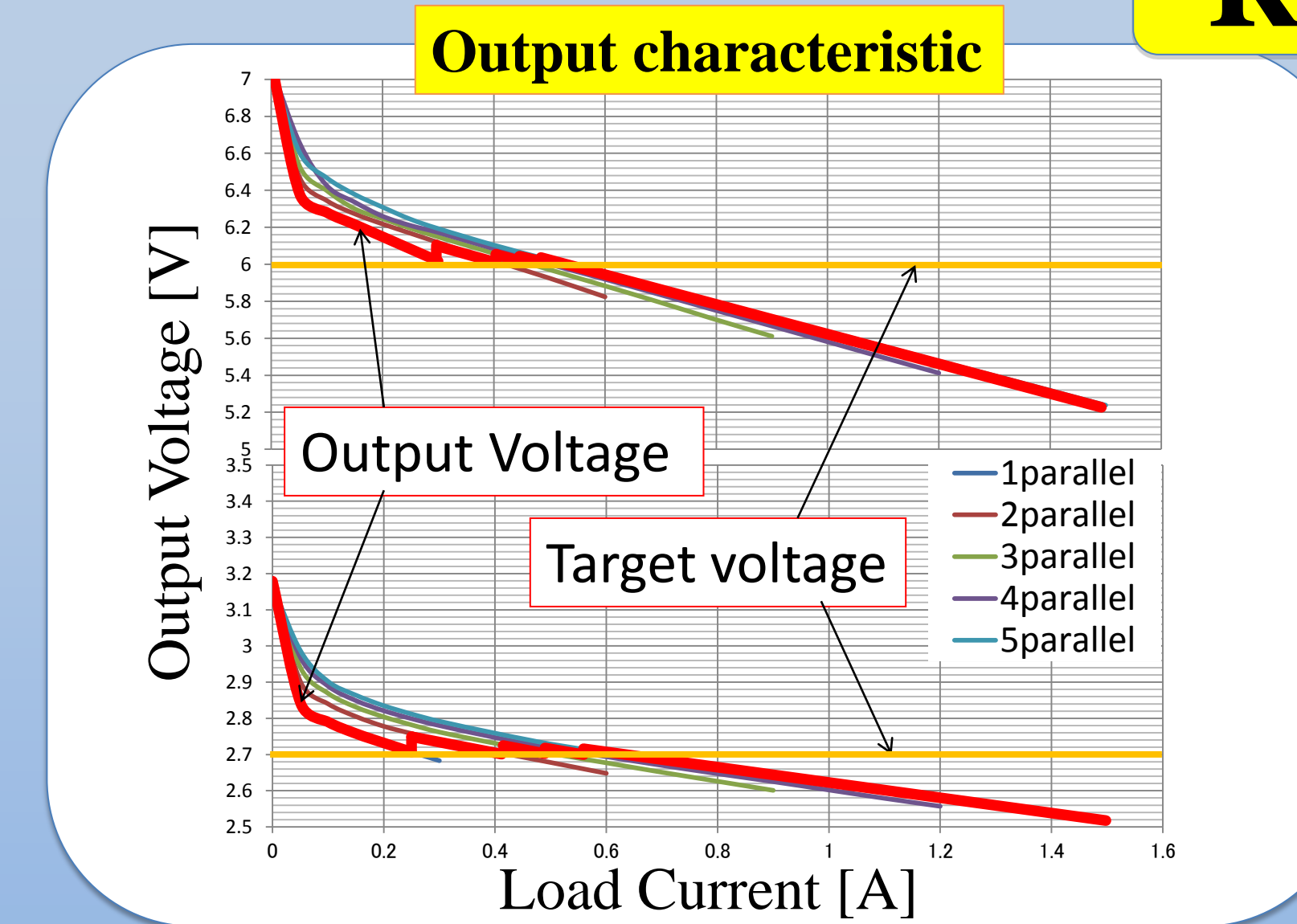
(Boost Converter)

$$V_{out} = \frac{D}{D'} V_{in} - \frac{r}{N} I$$

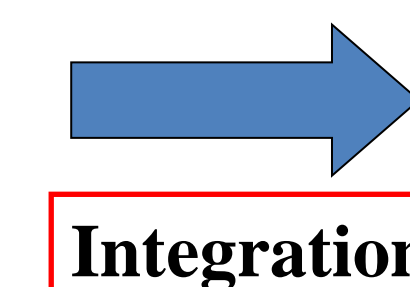
(Buck - Boost Converter)

Formula

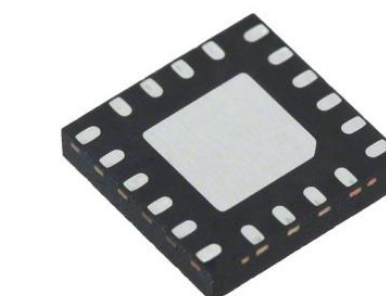
Results



Future work



Integration



Block diagram

Control method

Future work

Integration