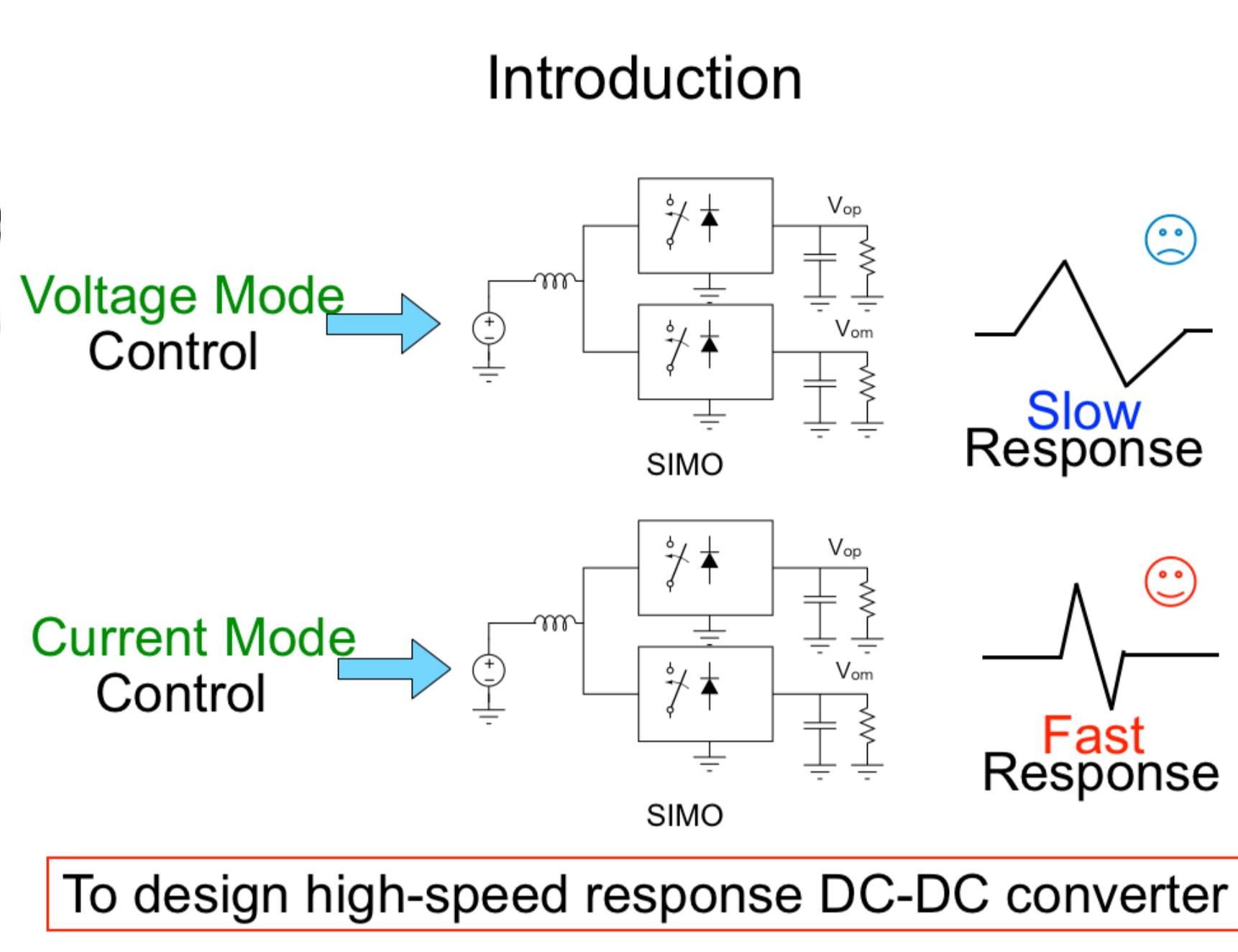
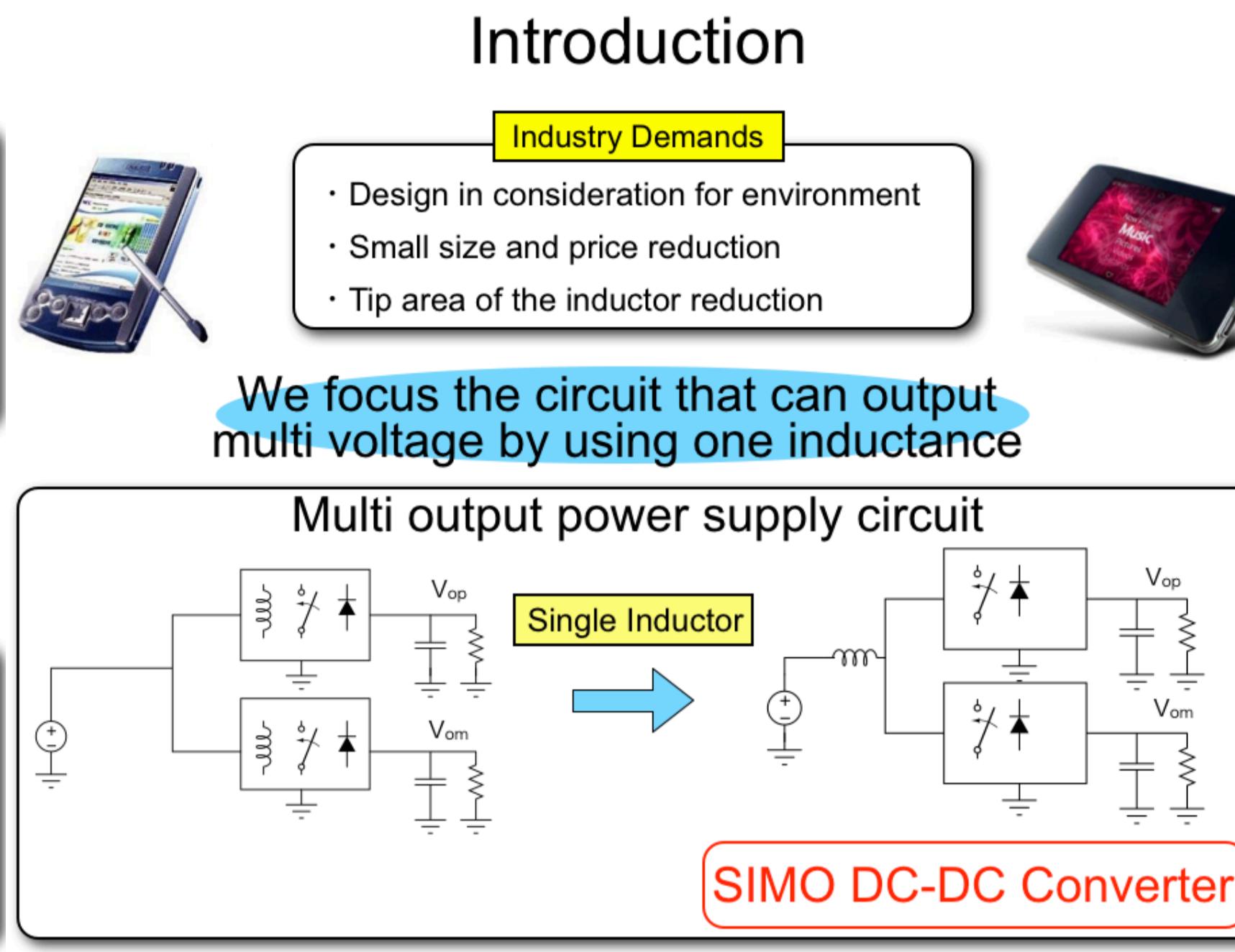
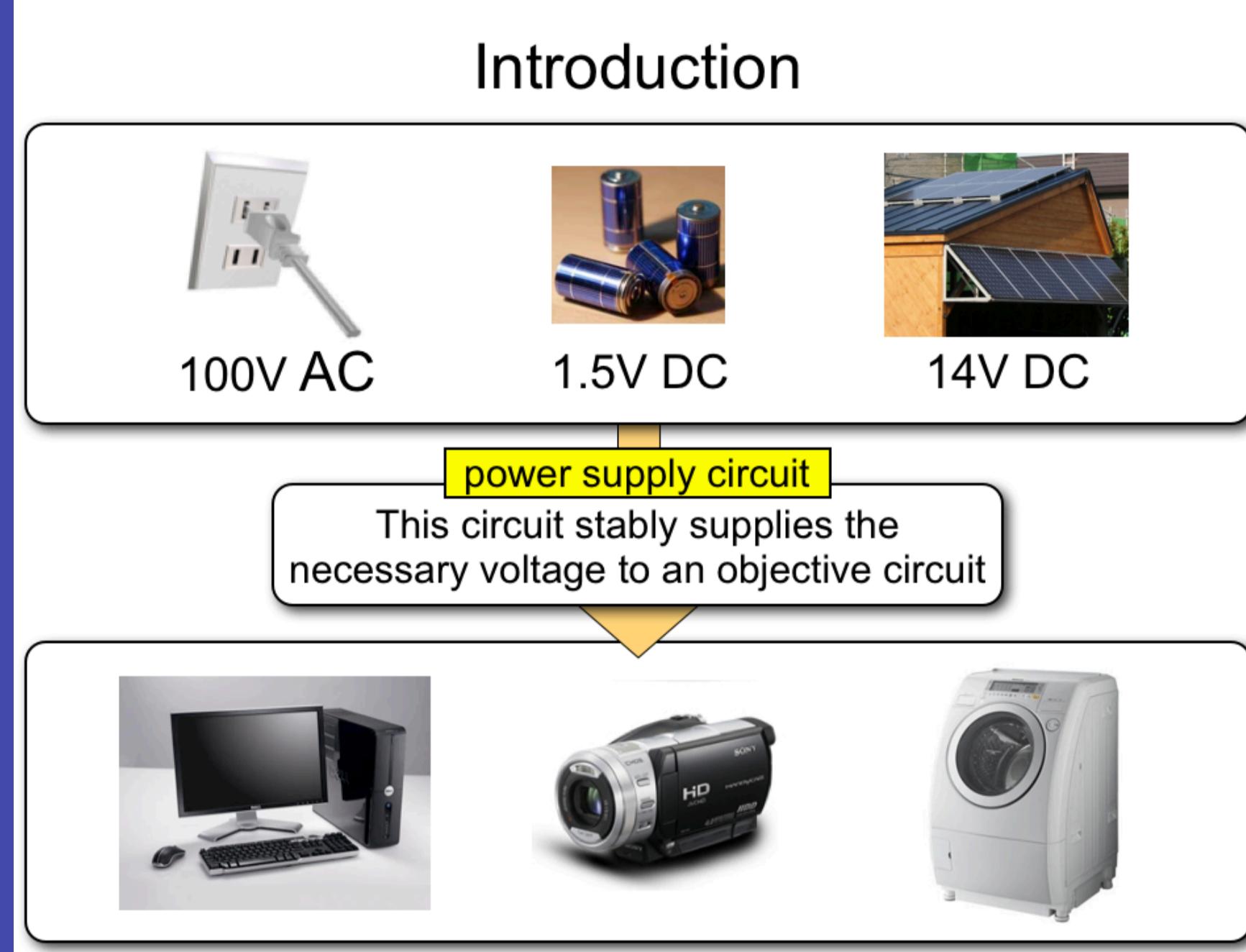


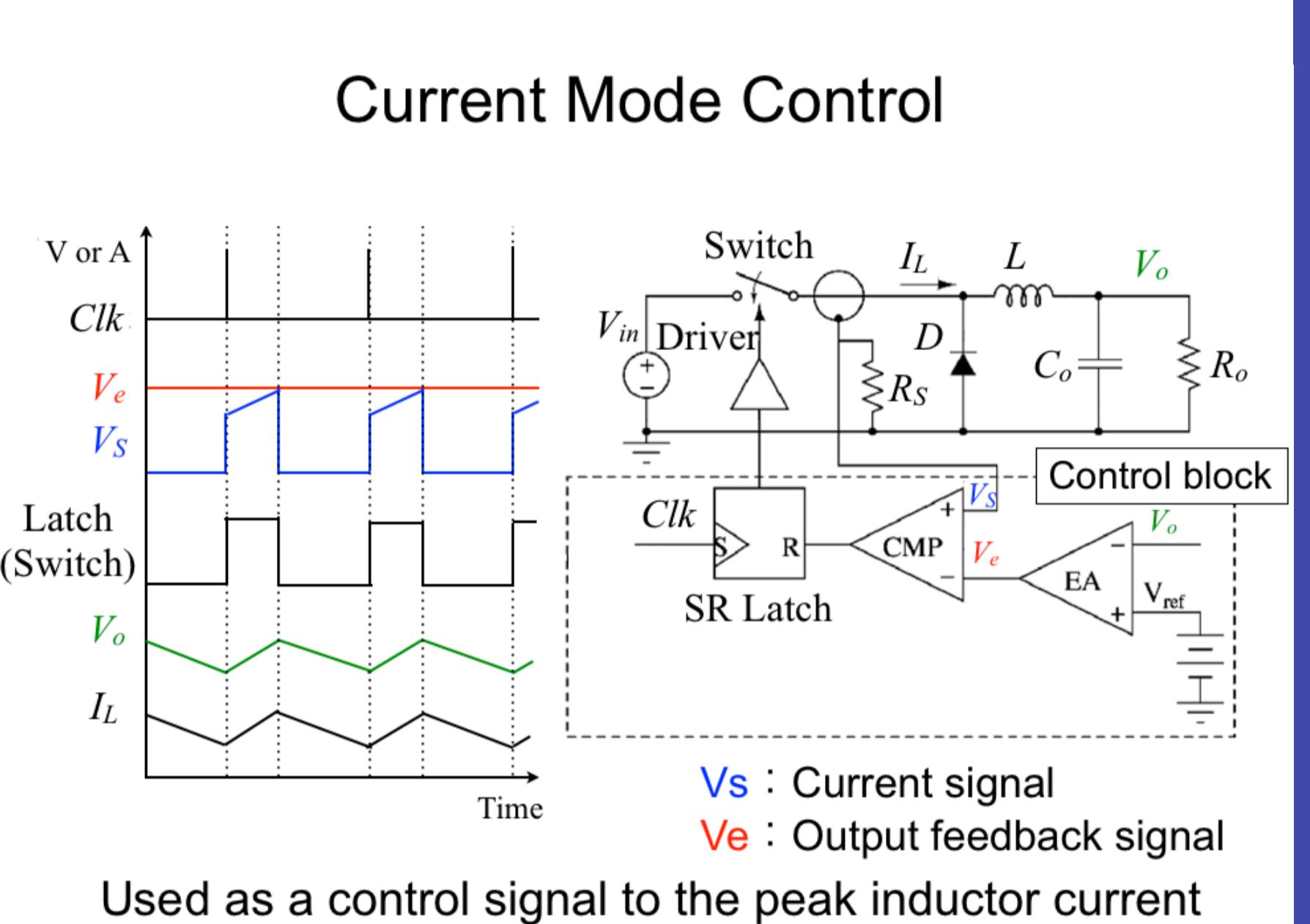
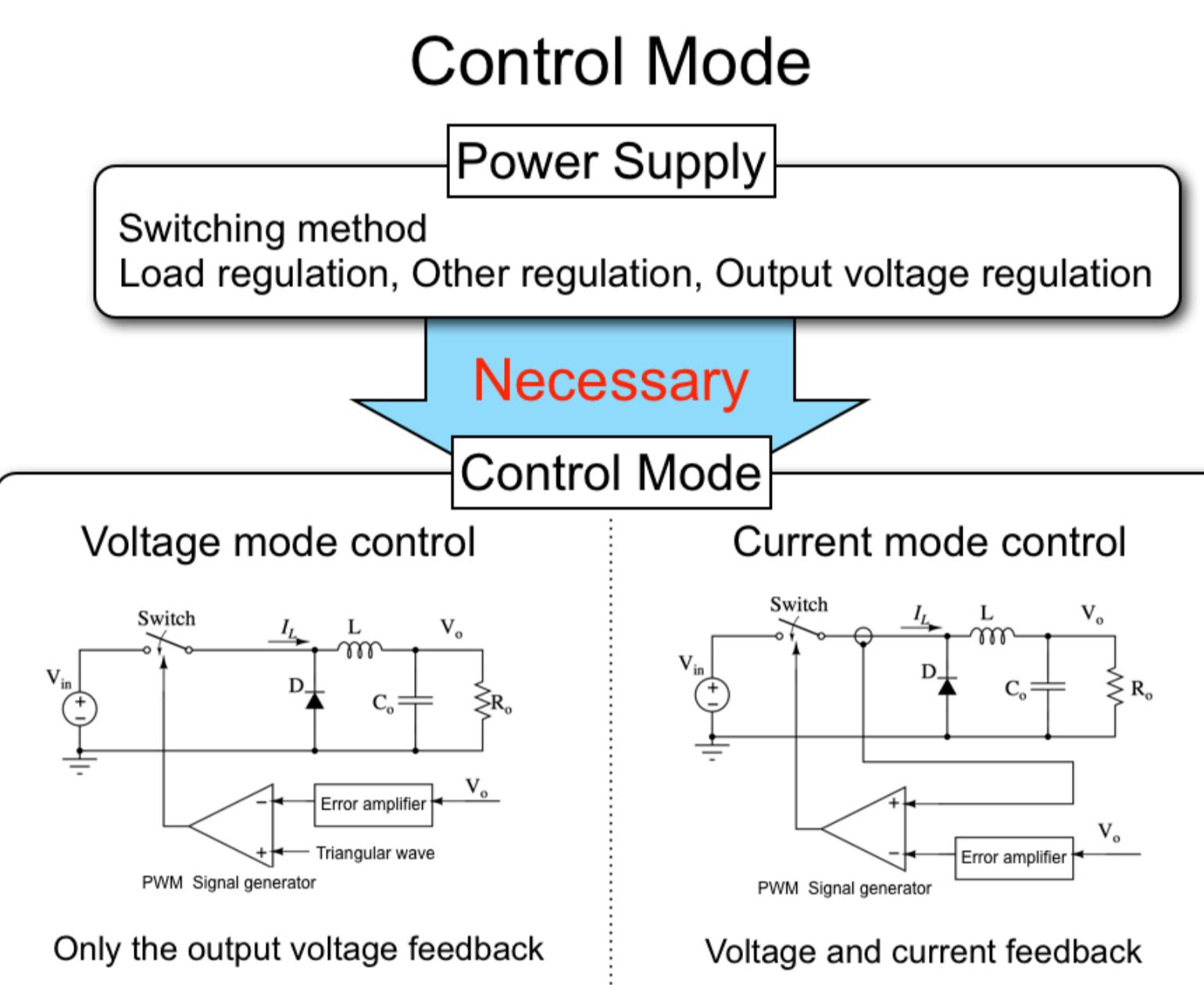
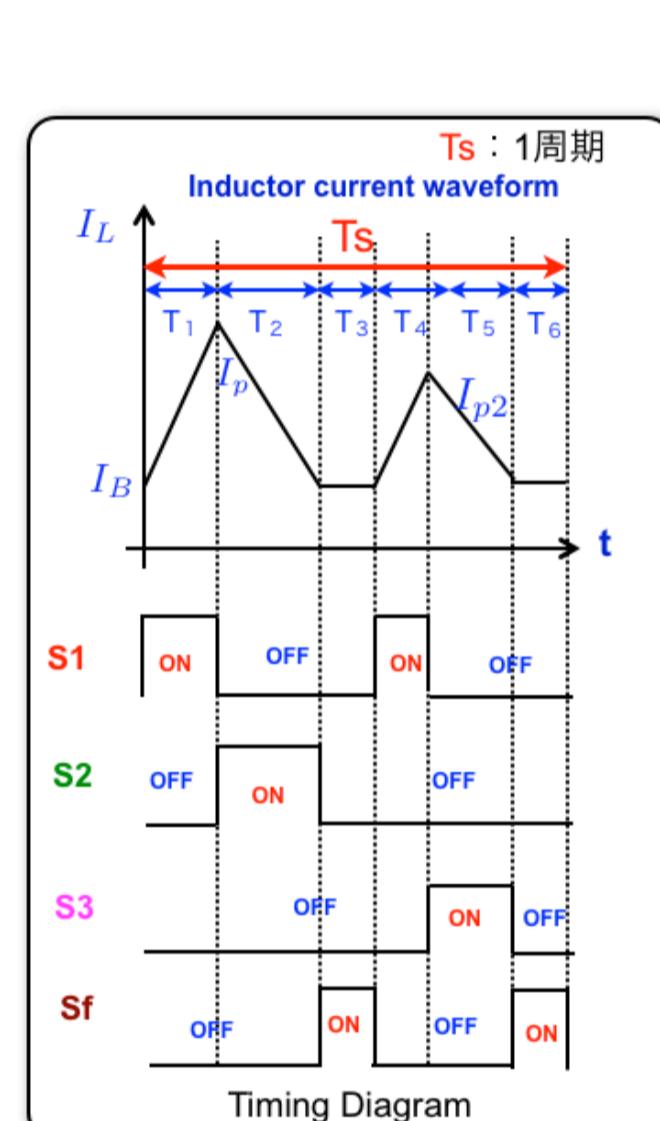
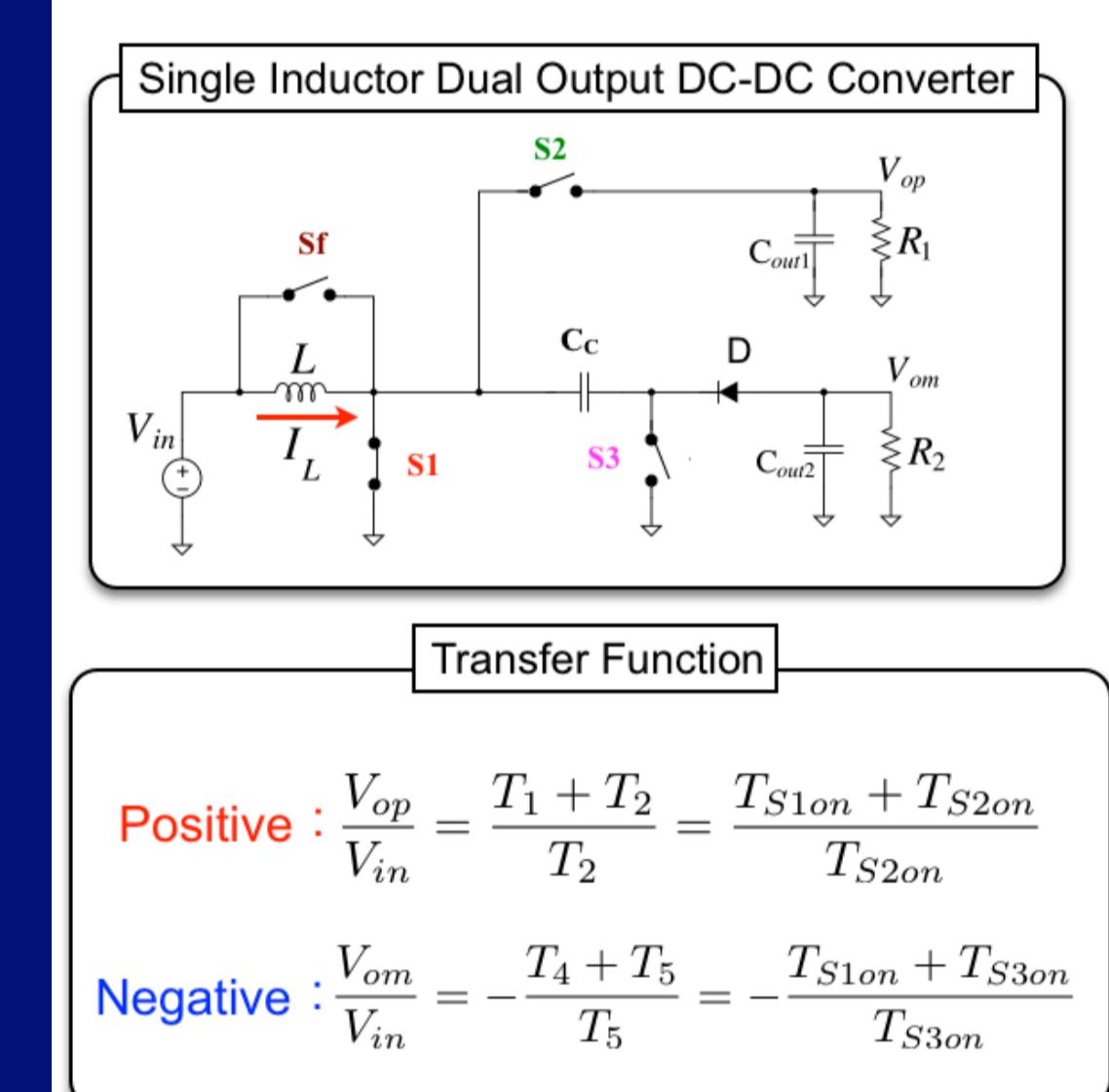
SIBO DC-DC Converter with Current Mode Control Circuit

Takashi Okada, Nobukazu Takai, Hiroyuki Iwase, Yasunori Kobori, Haruo Kobayashi, Takahiro Odaguchi^t, Isao Nakanishi^t, Kenji Nemoto^t, Jun-ichi Matsuda^t
Graduate School of Engineering, Gunma University, JAPAN, ^tAKM, JAPAN
email: t11801607@gunma-u.ac.jp

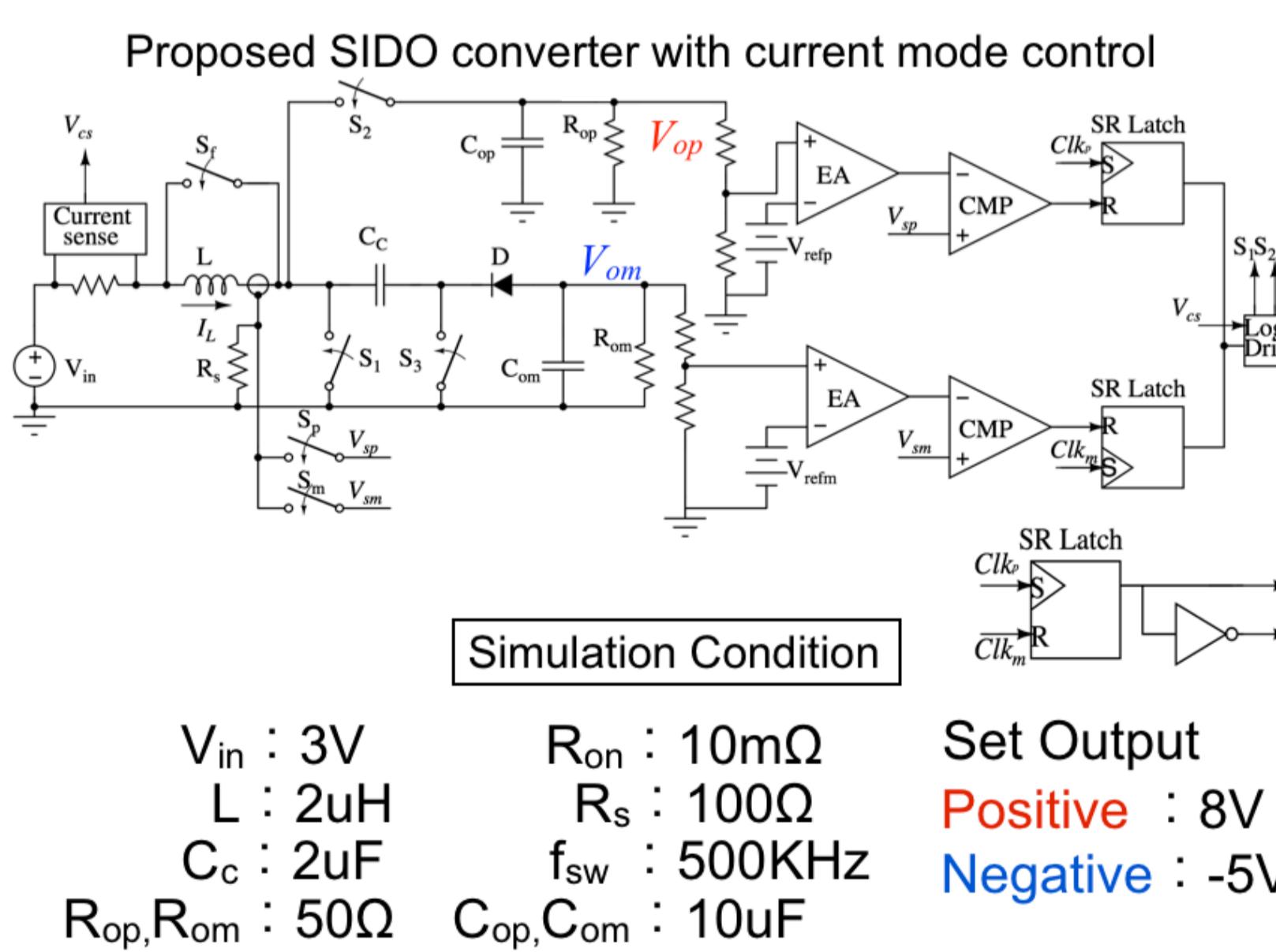
Introduction



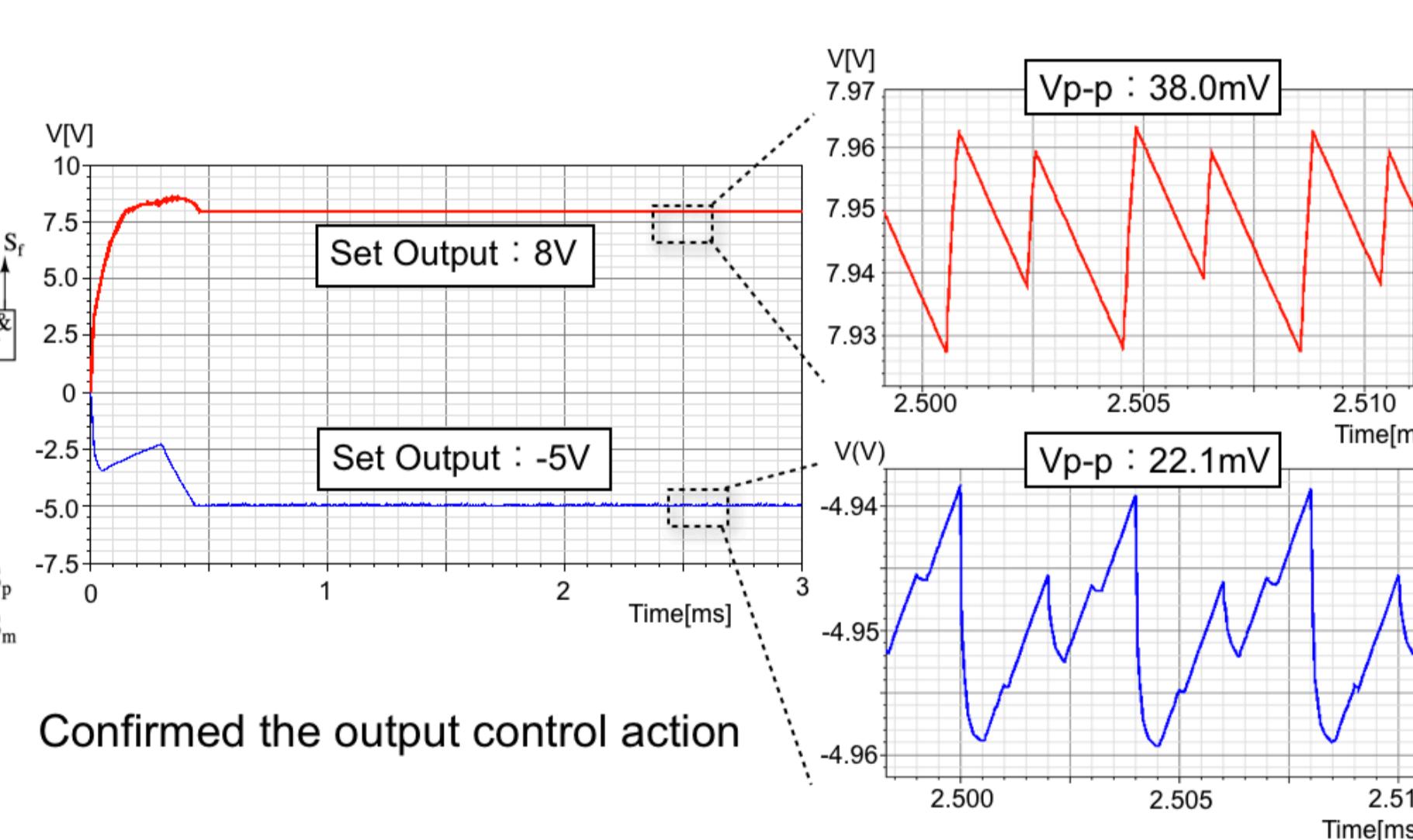
SIBO DC-DC Converter



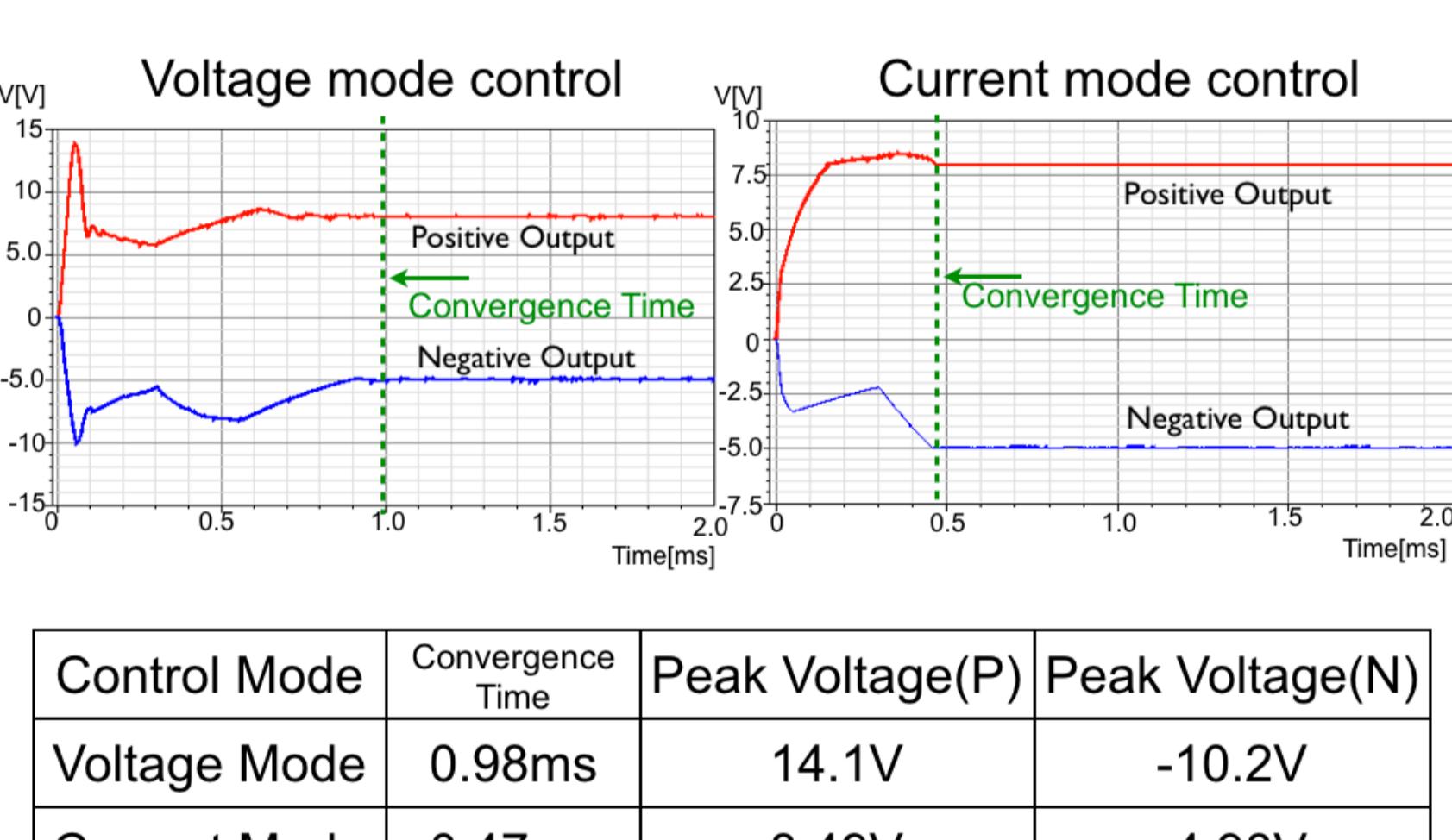
Simulation Condition



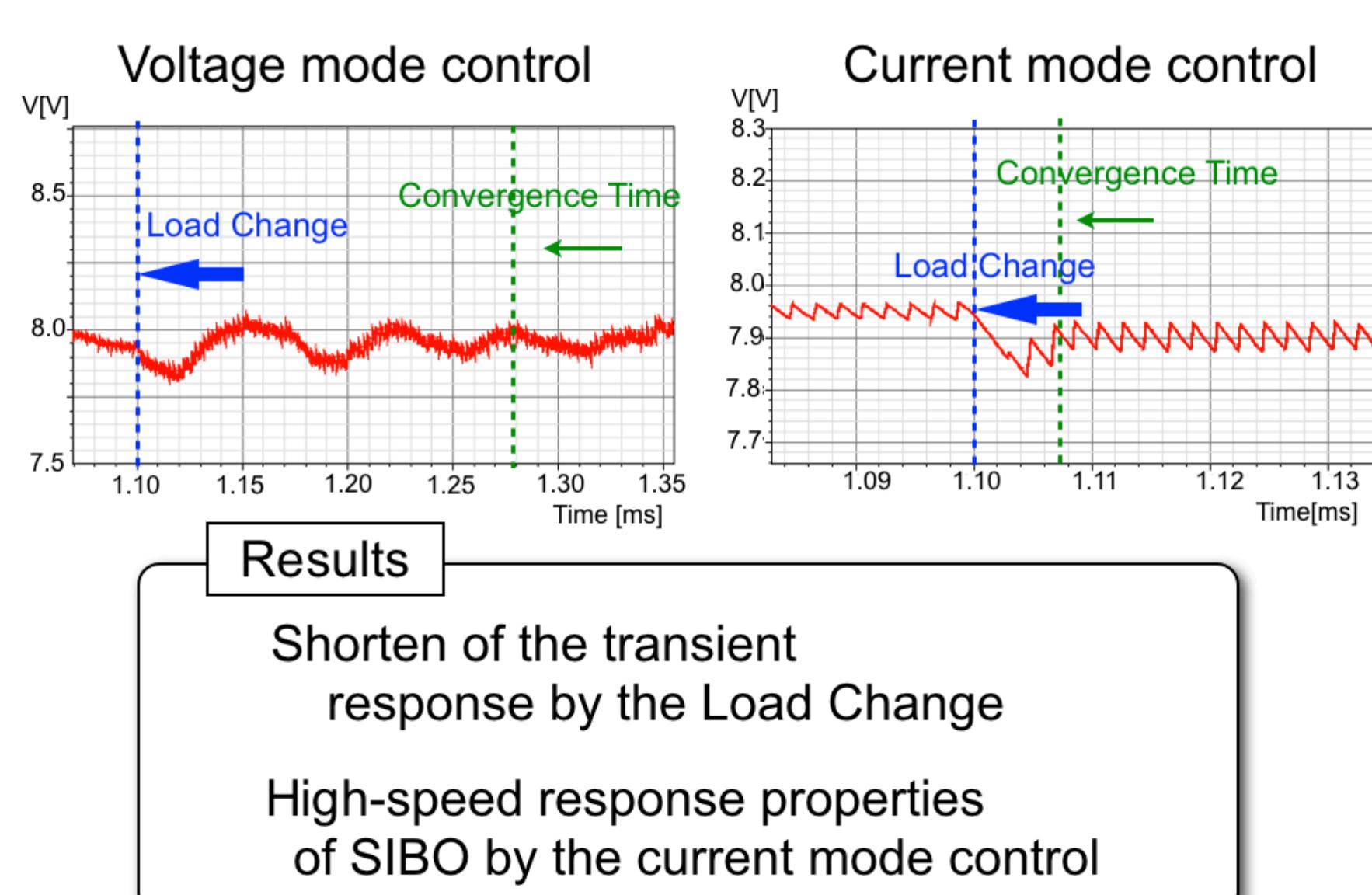
Simulation Results



Comparison with Voltage Mode Control



Comparison of The Load Regulation



Conclusion

- Response of voltage mode control
- Fast response can be improved by current mode control
- Realize high-speed response properties of SIBO by the current mode control

Related Works

- Considering parasitic capacitance, parasitic interconnect simulation
- Improvement of cross-regulation

References

- [1] Nobukazu Takai, Kenji Takahashi, Hajime Yokoo, Shunsuke Miwa, Kengo Tsushima, Hiroyuki Iwase, Haruo Kobayashi, Takahiro Odaguchi, Shigeki Takayama, Isao Fukai, Jun-ichi Matsuda, "Single Inductor Bipolar Outputs DC-DC Converter Using Charge Pump," IEEJ International Analog VLSI Workshop, Pavia, Italy (Sept. 2010).
- [2] Yi Zhang and Dongsheng Ma, "Integrated SIMO DC-DC Converter with On-Line Charge Meter for Adaptive PCCM Operation", IEEE International Symposium on Circuits and Systems (May. 2011).
- [3] K. Takahashi, H. Yokoo, S. Miwa, H. Iwase, N. Takai, H. Kobayashi, T. Odaguchi, S. Takayama, T. Oomori, I. Nakanishi, K. Nemoto, J. Matsuda "Single Inductor DC-DC Converter with Independent Bipolar Outputs using Charge Pump of Circuit Voltage Control", 24th Workshop on Circuits and Systems, Awaji Island (Aug. 2011).