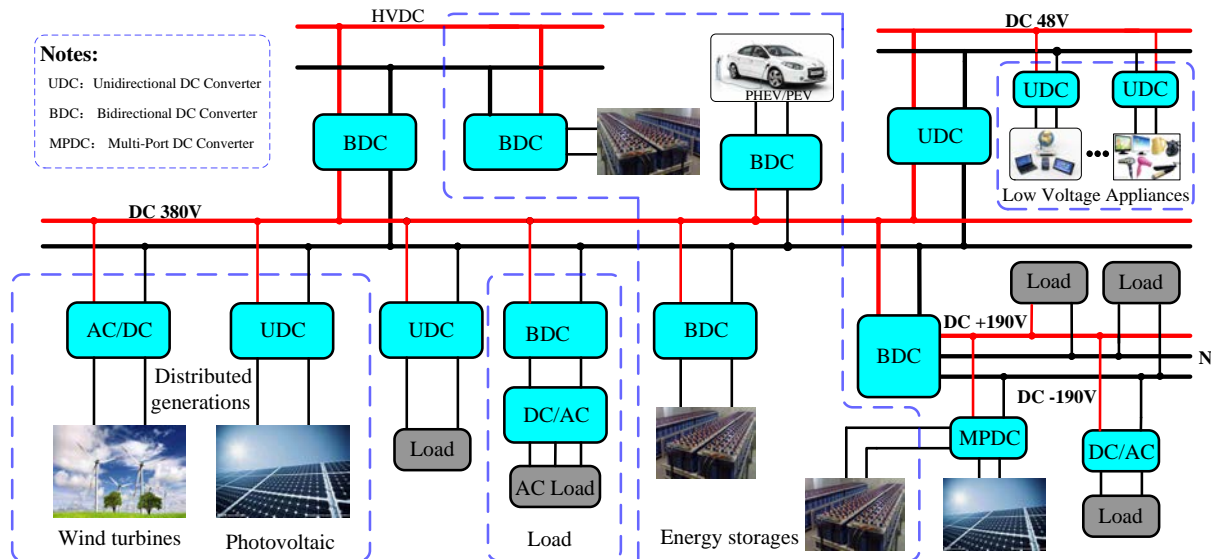


Research and Application of Bi-directional DC/DC Converters for DC Microgrid

Lijun Zhang, and Fei Wang



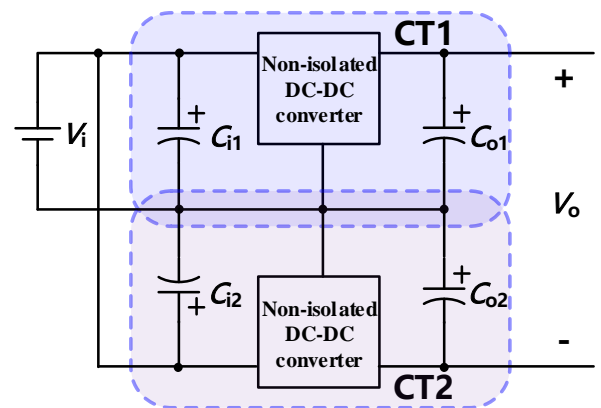
Structure of DC Microgrid



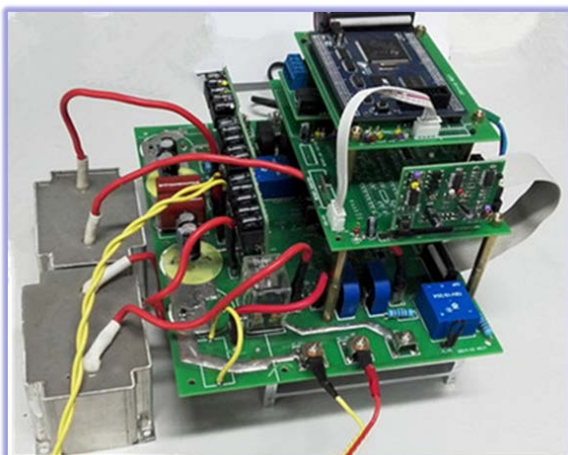
Research contents

- Control strategy and small signal modeling of DC-DC converters as well as the optimization of controllers
- Design of Interleaved-Paralleled Bi-Directional Converters (IPBDC)
- Topology deduction of high-gain, non-isolated DC-DC converters and the corresponding bi-directional converters
- Application, topology deduction and control strategy optimization of voltage balancers

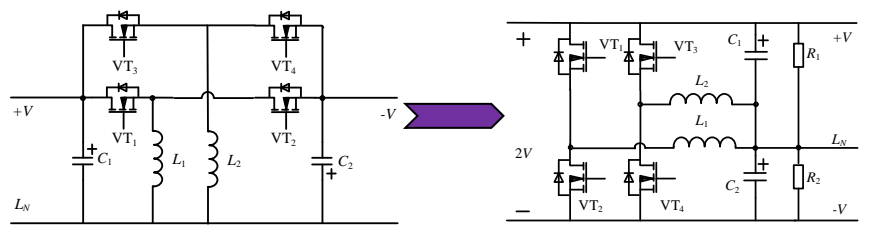
Two clusters of high-gain DC converters



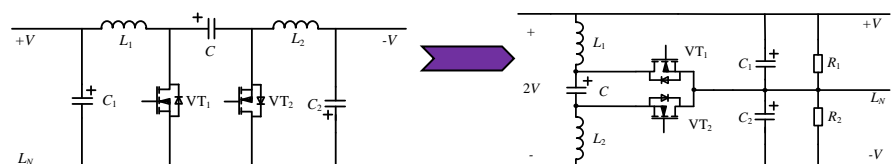
Platform of IPBDC



Topology of the voltage balancer



Interleaved Buck/Boost-type voltage balancer



Cuk-type voltage balancer

