

Contribution ID: 247

Type: Poster

A ZCS AC/DC Converter with LCL

Wednesday 7 June 2017 13:40 (2 hours)

This paper studies an inductor-capacitor-inductor(LCL)voltage-source converter(VSC)which can be implemented by zero current switches(ZCS). The ZCS has potential applications in improving the efficiency of high-voltage high-current system, such as servo power supplies at over 10 MW for the compressed plasma suggested in[Li, G. High-gain high-field fusion plasma,Scientific Reports, 2015, 5]. This converter is composed of an ac/dc/ac insulated-gate bipolar transistor-based VSC converter and a passive LCL circuit designed for matching the conventional PWM converter. The converter parameters are tested for designing LCL circuit to have optimal response during the faults, realize ZCS control, and minimize converter losses. The simulation model is built based on the MATLAB platform. The simulation results show that the rectifier has good controllability and testing rig is being built. The simulation confirms the capability to control the load current for the compressed plasma .

Eligible for student paper award?

Yes

 Author:
 FENG, ZHU

 Co-author:
 LI, GE

 Presenter:
 HANG, Qin

 Session Classification:
 W.POS: Poster Session W

Track Classification: Power supply systems