Depending on the technology, the behavior of power semiconductor devices can be directly influenced by the gate connection. Thus, the speed of a switching action and correspondingly also factors such as switching losses, EMI and device stress of a semiconductor device can be actively controlled during operation in a power electronic converter.

In the context of this thesis, a closed-loop control for the combined analog control of current and voltage transients during a switching operation is to be designed and constructed. Subsequently, the control circuit is experimentally verified under nominal conditions in a double-pulse test bench.

Experiences in circuit design and experimental laboratory work are desirable, but not necessary.

Good luck!