ECPE Online Course ´Power Electronics´

Structure of the Online Course on Electronic Power Conversion:

DC/DC	AC/DC	DC/AC	AC/AC
• **Basic principles** • Buck converter • Boost converter • Buck+boost converter • Further basic conv. topol. • Inductor/transformer basics • Flyback converter • Forward converter • Full-bridge converter	• Single-phase diode rectifier • Single-phase active rectifier, boost PFC • 3-phase diode rectifier • 3-phase active rectifier	• Single-phase PWM full-bridge • 3-phase PWM full-bridge • 3-phase thyristor bridge	• Voltage DC link conv. • Matrix converter • Sparse matrix conv.

- Spectrum/filtering of square wave
- Current ripple
- Power semiconductor: diode
- Power semiconductor: transistor
- Conduction/switching losses
- Efficiency and losses
- Control of switching behavior
- Passive components, filter circuits
- Thermal design