Electric Speed Drives Technology in Transportation (ESDTT)

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Abstract: Electric car sales increased by 50% during 2015, which surpassed the car market sales by ten times¹. Hybrid electric cars still is a large business. The components industry is booming very fast with components such as batteries, supercapacitors, in wheel-systems, transmission and electric motors, and power electronics. There is a tendency to use electric speed drives with capacities from 5 to 15 KW for specific vehicles, such as golf carts, cargo vehicles, lifting vehicles and small shuttle buses. Permanent magnet synchronous motors (PMSM) and Induction Motors (IM) are the motors of choice for drives. To put it in perspective of education, job market and state of the art technology, in year 2013, 63 billion dollars were spent in electric motors alone and it is projected to spend 302 billion dollars by the year 2023. This is very important in terms of CO2 pollution and the environment as a whole. This project will introduce students into the speed-drive technologies being utilized for electric transportation with a look into the CO2 consequences.