

SYLLABUS :-

Electric vehicles (EV) development, past, present and future, comparison with IC engine drive vehicles. Batteries, fuel cells, ultracapacitors. Power converters in EV. Different types of motors used in EV and their torque-speed characteristics, motor control techniques, high performance and efficiency-optimized control, sensorless control. EV modeling, Tier Characteristics, slip phenomena. Road condition estimation, driving force observer. EV motion control: model following control, optimum slip ratio control, direct yaw movement control, lateral motion stabilization. Fuel cell Vehicles, Hybrid Electric Vehicles (HEV), series, parallel and series-parallel (split) systems.