

Electric vehicles – key to energy transition

Charging infrastructure for electric vehicles (EV) will be the key factor for ensuring a smooth transition to e-mobility. This keynote focusses on five technologies that will play a key role in this regard: smart charging, vehicle-to-grid (V2G), charging of EVs from photovoltaic panels (PV), contactless charging and on-road charging of EVs. Smart charging of EVs which will enable larger penetration of EVs and renewable energy, lower the charging cost and offer better utilization of the grid infrastructure. Bidirectional EV chargers will pave way for V2G technology where the EV can be used for energy arbitrage and demand side management. Solar charging of EV will result in sustainable transportation and use of the EV battery as PV storage. On the other hand, stationary contactless charging and on-road inductive charging of EV will remove the necessity for any cables, eliminate range anxiety issues and pave way for automated driving. Fast charging and multiplexing will be addressed too.