It has been over twenty years now since the GM EV1 and the Toyota Prius hybrid were launched, one using an induction motor and the other an interior permanent magnet machine. This is just enough time to start to look at these machines from a historical perspective, examining early technical choices and changes over time to the present day, focusing on systems that were commercialized by automakers. The talk will draw from published reports and teardowns of these motors to explain and quantify improvements over time. The presentation will then logically follow with an attempt to extrapolate into the future, looking at what is likely and perhaps less likely to be seen in future electric and hybrid vehicles, from a point of view of materials, topology.