

**Structure of titania based electrodes and
their electrochemical behaviour.**

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Titanium dioxide (TiO_2) is one of the few materials that intercalates Li at low voltages and is thus a suitable anode material. Titania occurs in a number of polymorphs with very different intercalation behaviour which has been studied using a variety of experimental and theoretical techniques. However, the relationship between the insertion mechanism and the lattice morphology has not been established. We present a model based on first principles calculations which allows to relate structure to the electrochemical performance for a wide range of titanates.