Redox potential (FBLT)

In order for the mitochondrial **electron transport chain** *(ETC)* to function as described, there must be a force that "pushes" electrons from NADH to molecular oxygen through it. In the case of burning wood, we talked about the electronegativity of elemental oxygen. A related measure of electron affinity is the **redox potential.**

In the subsection What drives our cells, we described the electrode potential created by immersing a rod of pure metal in a solution of its ions (i.e. its oxidized form). If we separate the two half-reactions present in each redox reaction (reduction and oxidation), we can define **standard electrode potentials** for them under standard conditions. Depending on the direction of these reactions, we call them **standard oxidation** and **standard reduction potential**. Collectively, we speak of **redox potential** (usually describing a reaction in the direction of its typical course).

The flow of electrons in the right direction (ie from NADH to oxygen via complexes and mobile electron carriers) in the ETC can be explained by the fact that the redox (more specifically, reduction) potentials of all "stops along the way" gradually increase. This means that as you progress through the chain, its individual links become easier and easier to reduce. The oxygen at the end of the chain is by far the easiest to reduce - it is a very good oxidizing agent.