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Sommario/riassunto	The focus of this work is on the modelling of the degradation behaviour of conventional lithium-ion cells with graphite/NMC electrodes in conjunction with electrolytes based on LiPF6 in organic solvents. The potential for improvements of parameterization methods dealing with physical-chemical aging effects and simulation studies for optimization of the battery lifetime is shown. In the process of model parameterization mostly data-based as well as non-invasive analysis methods are used.