

Chapter 3

Conclusion and Outlook

Although many publications exist which report on polysaccharides as components in batteries, particularly as binder and separators, their full potential has not been fully exploited yet. This can be attributed that mainly cellulose derivatives have been used and systematic approaches to improve the device performance by specifically altering the polysaccharide backbone have not been demonstrated so far. As a consequence, there are innumerable options to further improve different type of battery components to improve the performance of batteries. However, the largest potential can be seen in the development of new SPE and GPE systems since intense research in those areas has just begun a few years ago, whereas cellulose based binders and separators have been employed for quite some time. All these efforts must take into account challenges which are not directly related to the chemistry but to the engineering and device fabrication point of view which have a significant impact on the overall device performance, rather than material performance on its own.

Acknowledgements The Austrian Research Promotion agency for funding by the Research Studios Austria for Advanced and Innovative Materials for Electrochemical Energy Storage (Grant Number 844759) and the COMET K-project FLIPPR².