Active, inactive and passive electrode materials in lithium ion batteries

M. Winter

MEET Battery Research Center, Institute of Physical Chemistry, Westfälische Wilhelms-University Münster, Corrensstraße 46, DE-48149 Münster, Germany
E-mail: martin.winter@uni-muenster.de

Today, it is widely accepted that materials research in the field of electrochemical energy storage has to follow a system approach as the interactions between active materials, the electrolyte, the separator, and the various inactive materials are of similar or even higher importance as the properties and performance parameters of the individual materials only. In this presentation, we will discuss the influence of inactive electrode materials on the performance of lithium ion batteries. Particular attention will be paid to conductive fillers and the Al current collector. The question will be raised, whether these materials are inactive or passive.

References

[1] Krämer, E.; Passerini, S.; Winter, M., ECS *Electrochemistry Letters*, **2012**, *1(5)*, C1 - C3.

[2] Krämer, E.; Schedlbauer, T.; Hoffmann, B.; Terborg, L.; Nowak, S.; Gores, H.J.; Passerini, S.; Winter, M., *Journal of The Electrochemical Society*, **2013**, 160 (2), A356-A360

[3] Schmitz, R.; Müller, R.; Krüger, S.; Schmitz, R.W., Langer, Th.; Hoffmann, B.; Nowak S., Lex-Balducci, A.; Passerini, S.; Winter, M.; Schreiner, C., *Journal of Power Sources*, **2012**, *217*, 98-101.

[4] Krämer, E.; Schmitz, R.; Niehoff, P.; Passerini, S.; Winter, M.; *Electrochimica Acta*, **2012**, *81*, 161-165.

[5] Krämer, E.; Schmitz, R.; Passerini, S.; Winter, M.; Schreiner, C., *Electrochemistry Communications*, **2012**, *16*, 41-43.

[6] Schmitz, R.; Schmitz, R.W..; Müller, R.; Kazakova, O.; Kallinovich, N.; Röschenthaler, G-V.; Winter, M.; Passerini, S.; Lex-Balducci, A.; *Journal of Power Sources*, **2012**, *205*, 408-413.