Chapter 6
Conclusion

In this book, various emerging multiple access schemes for the mMTC system have been introduced. First the characteristics and requirements of the mMTC scenario are described. For the sake of saving the enormous control signaling overheads in the small data packet transmissions, grant-free random access is regarded as a suitable random access procedure for mMTC. Nevertheless, new challenges including anonymous transmission and collision are arisen in grant-free random access. The researchers are driven to consider novel multiple access schemes. Therein, CSMUD, CSA and CTSMA are discussed. In CSMUD, sparse user activity based on sporadic transmission in mMTC is exploited to mitigate the influence of MAI. CSA enhances the collision resolution capability of ALOHA by employing SIC on multiple slots. In CTSMA, tandem spreading and segment coding are applied to confine the impact of collision to a deterministic number of segments and resolve them.

F. Wang, G. Ma, *Massive Machine Type Communications*, SpringerBriefs in Electrical and Computer Engineering, https://doi.org/10.1007/978-3-030-13574-4_6