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Machine Learning for Advanced Battery Systems

Guest Editors:

Dr. Benben Jiang

Department of Automation, Tsinghua University, Beijing 100084, China

Dr. Guannan He

Department of Industrial Engineering and Management, College of Engineering, Peking University, Beijing 100871, China

Dr. Xiang Chen

Beijing Key Laboratory of Green Chemical Reaction Engineering and Technology, Department of Chemical Engineering, Tsinghua University, Beijing 100084, China

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Message from the Guest Editors

Dear Colleagues,

Machine learning has significant potential to enable a more economic, efficient, and reliable low-carbon transition of energy systems, such as improving generation and load forecasting, accelerating the design of next-generation battery chemistries, enhancing distributed energy resources coordination. and advancing batterv management systems. The purpose of this Special Issue is to provide an overview of the state of the art, and to discuss promising future research directions at the interface between energy and machine learning.

Potential topics include, but are not limited to, the following:

- Machine learning for battery management system including battery lifetime prediction, and optimal charge design;
- Reinforcement learning for distributed optimization and control of large-scale energy systems;
- Machine-learning-based time aggregation method for energy system planning;
- Battery system fault diagnosis with data-driven methods;
- Battery materials design assisted by machine learning.







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Editor-in-Chief

Prof. Dr. Andreas Jossen

Institute for Electrical Energy Storage Technology (EES), Technical University München (TUM), Arcisstrasse 21, 80333 Munich, Germany

Message from the Editor-in-Chief

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Batteries Editorial Office MDPI, St. Alban-Anlage 66 4052 Basel, Switzerland Tel: +41 61 683 77 34 www.mdpi.com mdpi.com/journal/batteries batteries@mdpi.com X@batteriesmdpi