International Federation of Automatic Control

Invites you on
Thursday, April 18, 2024
at 16:15 s.t.

to the lecture

“Machine Learning-based Lifetime Prediction and Charging Optimization of Lithium-ion Batteries”

Speaker:
Prof. Richard D. Braatz
IFAC Vice-President, Conference Board Chair

The lecture will take place in person at the **TU Vienna** (EI 11 Geodäsie Hörsaal, Gußhausstr. 27-29, Stiege 1, 3. Stock Raumnummer: CD0304) **and via Zoom** video conference.
The LINK will be distributed after registration.

Please RSVP to:
IFAC SECRETARIAT via e-mail:
secretariat@ifac-control.org

Abstract

"Machine Learning-based Lifetime Prediction and Charging Optimization of Lithium-ion Batteries"

by Prof. Richard D. Braatz
MIT Chemical Engineering
Cambridge, Massachusetts

This presentation describes advances in machine learning-based techniques for addressing systems problems that arise for lithium-ion batteries.

The specific systems problems include the prediction and classification of battery cycle lifetime (aka remaining useful life), the determination of optimal charging protocols, and the identification of fundamental physicochemical expressions for electrochemical kinetics, thermodynamics, and mass transfer from real-time video imaging.

The development of the techniques and their application are in collaboration with materials science, applied physics, and computer science researchers at Stanford University, Toyota Research Institute, and MIT.

Program

16.15 **Introduction**
Dr. Dimitri Peaucelle (FR)
IFAC Secretary, VP Operations

16.30 **Machine Learning-based Lifetime Prediction and Charging Optimization of Lithium-ion Batteries**

Speaker:
Prof. Richard D. Braatz
IFAC Vice-President, Conference Board Chair
Massachusetts Institute of Technology

17.15 **Discussion/Q&A**
Moderation
Dr. Dimitri Peaucelle