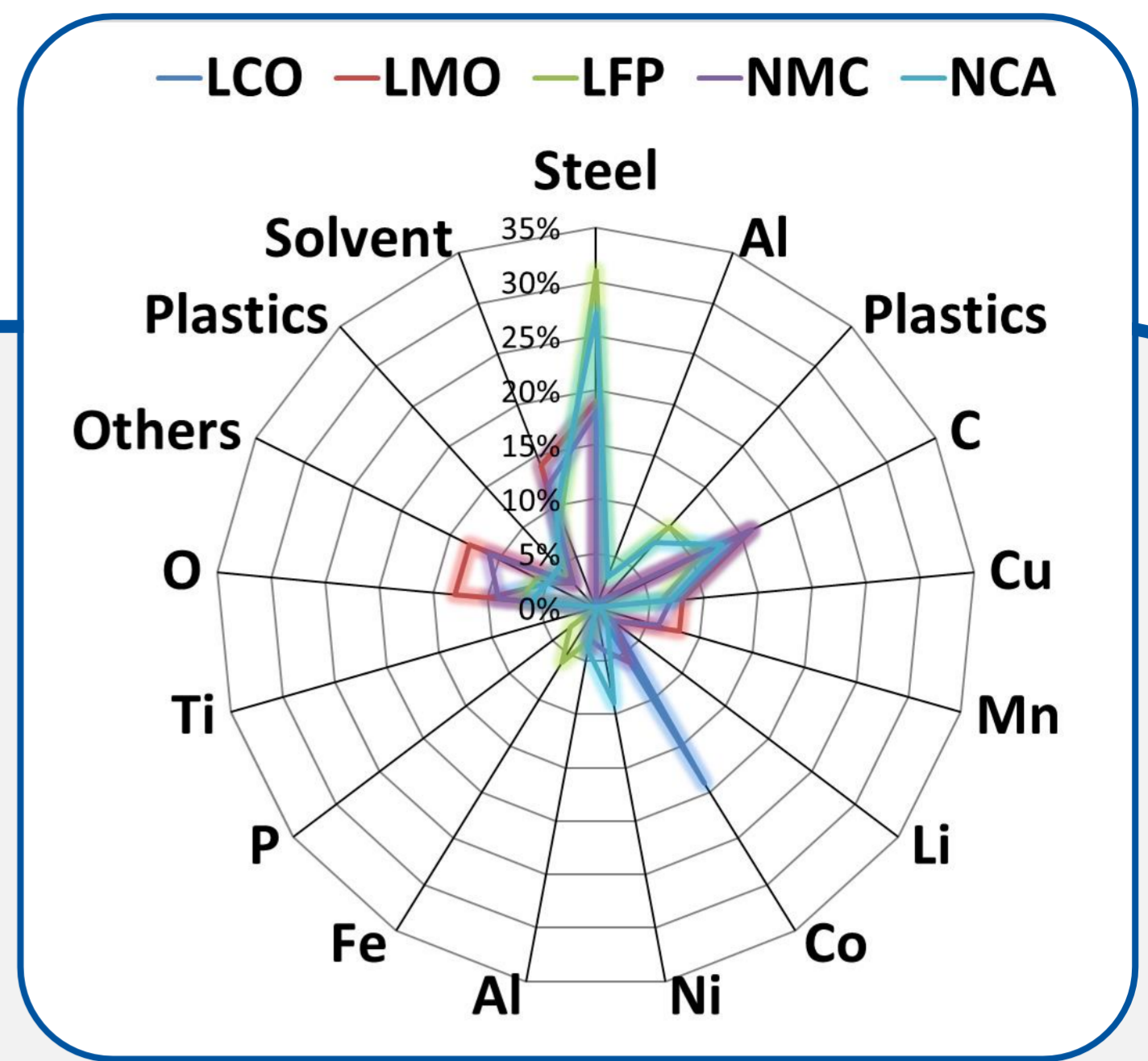


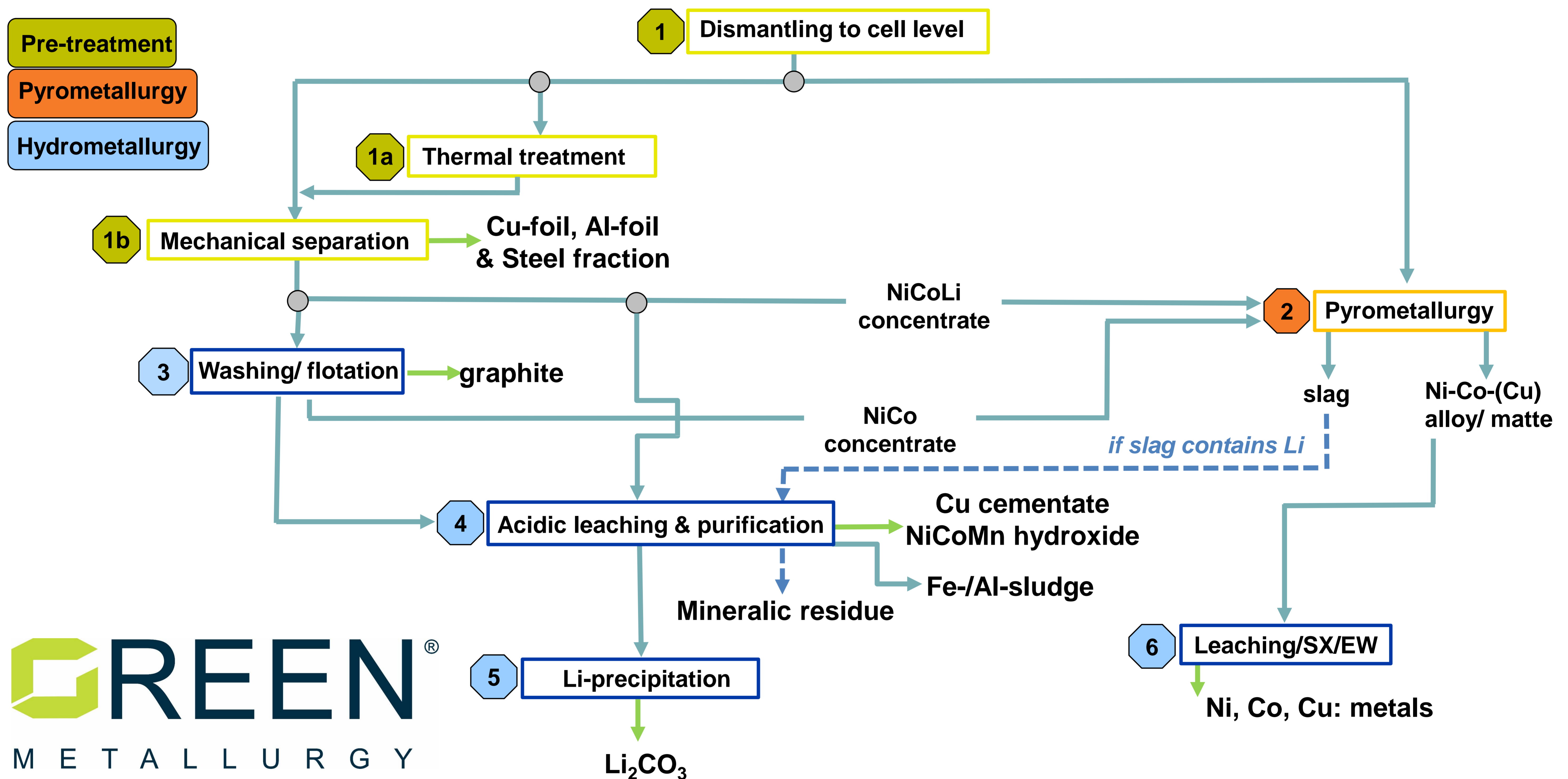
# Recovery of Valuable Metals from Batteries by Smart Process Design

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## Motivation

- **Battery market is increasing**
- **Different battery compositions and systems available**
- **Robust recycling processes needed**, but still unsolved challenges:
  - Interface between preparation technology and metallurgy to be defined
  - Recycling directive by EU demands weight-related Recycling Efficiency (RE)
  - Each recycling path has several drawbacks and benefits



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## Solutions and Suggestions

- **Metal-based approach** (Elemental Recovery Rate instead of Recycling Efficiency)
- **Multi-step process paths needed**, as combinations of pre-treatments, pyro- and hydrometallurgy



## Current research

- Optimal pre-treatment processes and parameters
- Benchmarking different methodologies in terms of yield and purity
- Developing recycling paths for next generation batteries (e.g. Li-S and Li-Si)



Poster based on EUROMAT key note from IME (Monday, F6, 16:30)  
 For more information please follow this QR code.  
 In case of questions please contact [lpeters@ime-aachen.de](mailto:lpeters@ime-aachen.de)