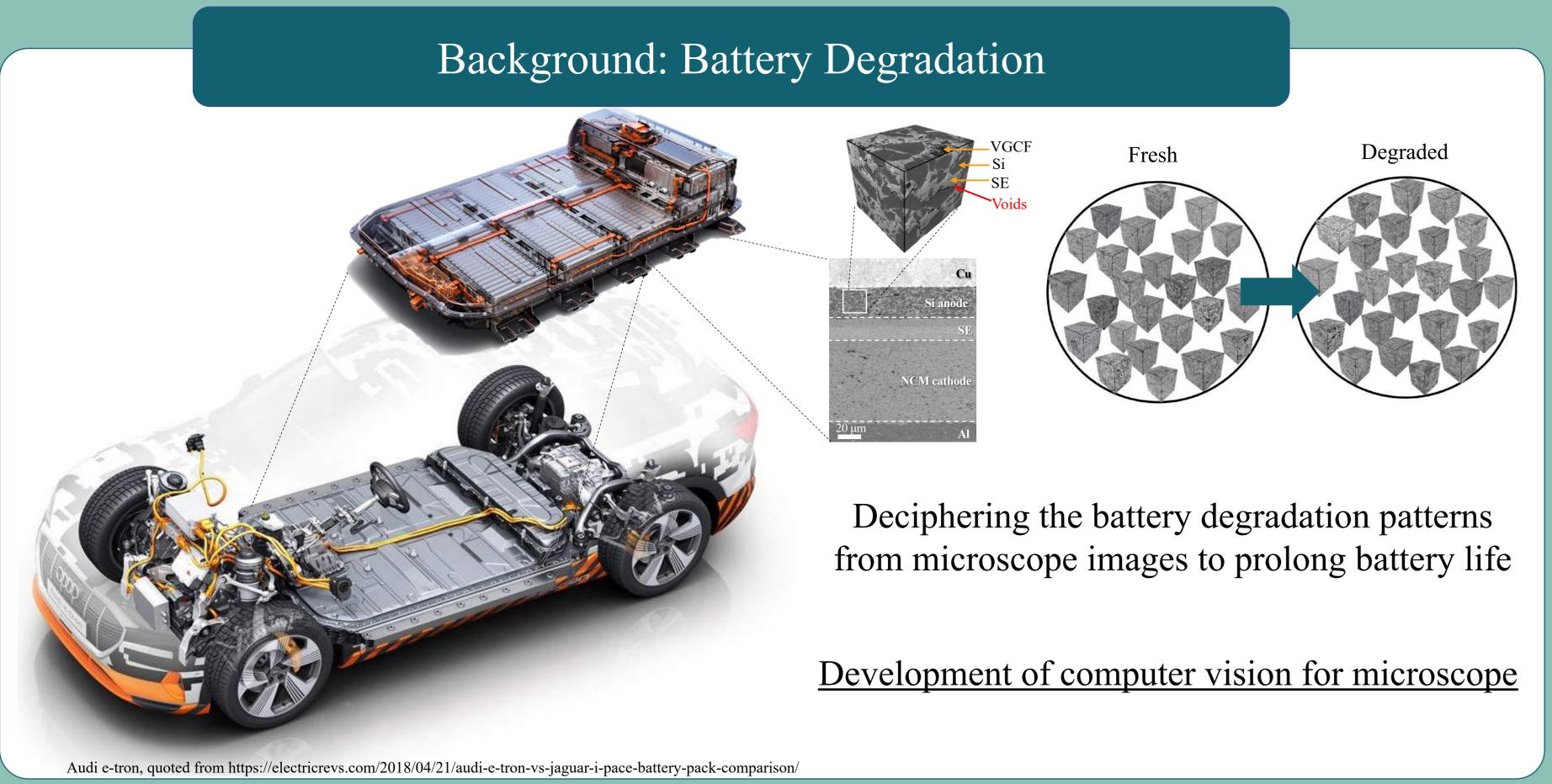
Physics-Aware Image-to-Image Translation to Explore Long-Life All-Solid-State Batteries Masaki Adachi*, Ignas Budvytis, Caterina Ducati & Roberto Cipolla



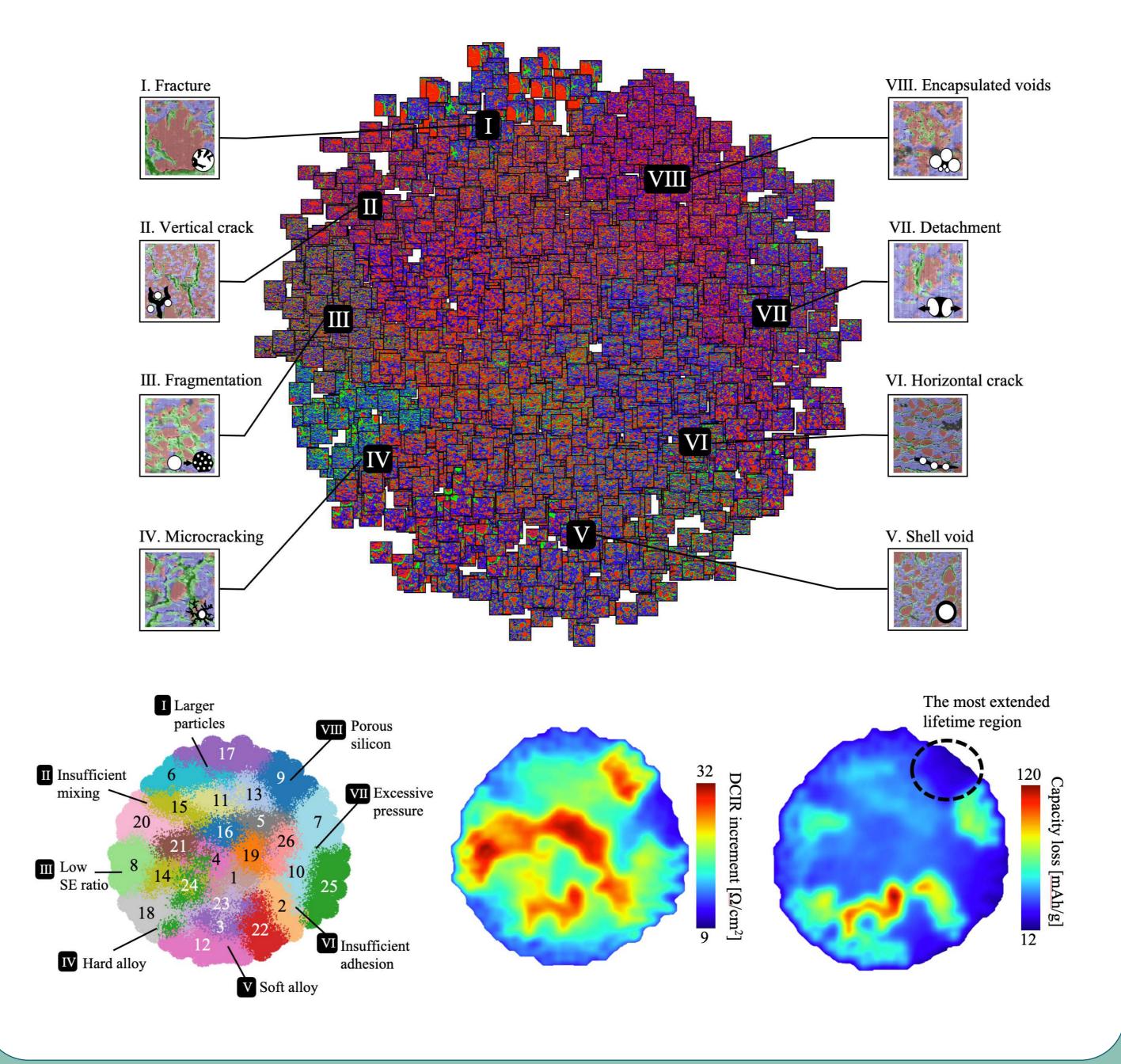


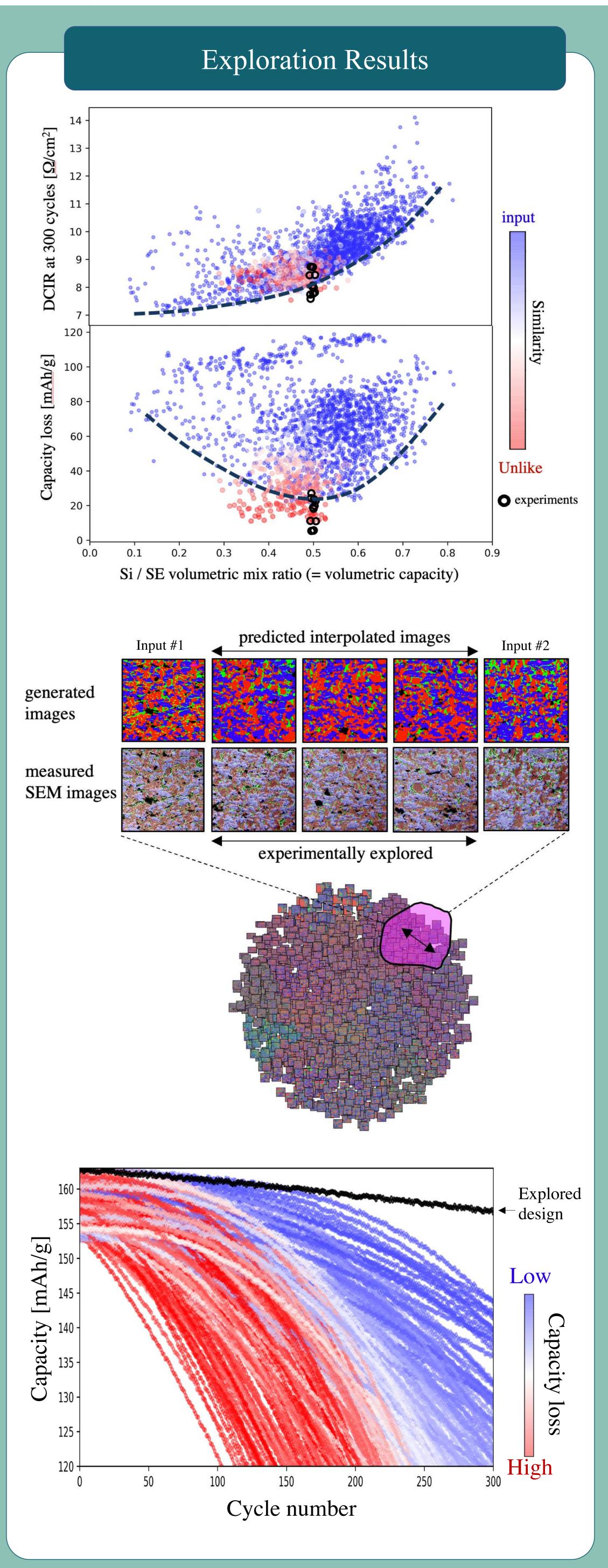
Degradation Patterns After conversion Classification accuracy Prediction R^2 score Ours w/o SSCL 48.77 24.83 Ours w/o classification 97.81 Ours w/o prediction Only classification 98.27 90.5 Only prediction CycleGAN 19.84 2.10 10.97

Image-to-Image Translation Results

Physics-aware Image-to-Image Translation Model Multitask decoders Mixture of experts PHASE 1 Multitask learning generator Modality-invariant Image reconstruction fingerprint Labelled image Raw image Predictor Predictor Performance prediction Classifier Design classification Fingerprint of PHASE 2 degradation **Cross-domain learning** Post-cycling Pre-cycling

Degradation Patterns Recognition





PHASE 3
Metric learning

