

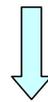
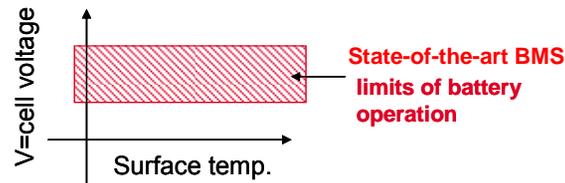
Advanced Battery Management Systems

Robert Bosch, RBBS, UC San Diego, SLAC
 Dr. Ashish Krupadanam, Principal Engineer
 650.320.2998 | Ashish.Krupadanam@us.bosch.com

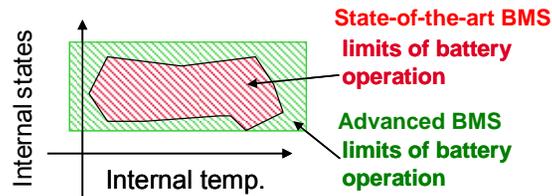
Technology

- Develop advanced battery management system that estimates internal immeasurable states to impose safer constraints on battery operation
- Use of optimal control algorithms to push envelope on charging rates and battery utilization while maintaining battery safety and longevity

State-of-the-art

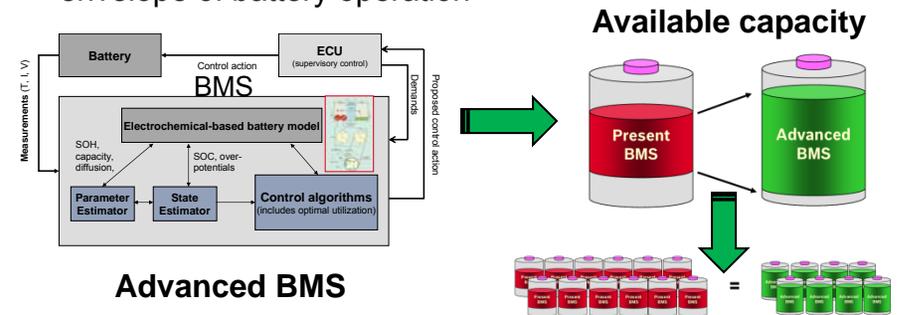


Proposed



Advantage and Differentiation

- Reduce cost of batteries > 25% by increasing the envelope of battery operation



- Reduce charge time by more than 50%, enable higher penetration of EVs

Performance Targets

Metric	State of the Art	Proposed
Cost of battery pack	\$10,000	\$7,500
Charge time from 0% to 80% capacity	30 min to 3 hrs	< 15 min
Available capacity	100%	125% – 133%

* Wholly owned subsidiary of Robert Bosch LLC



Please contact us regarding: press, R&D and demonstration projects