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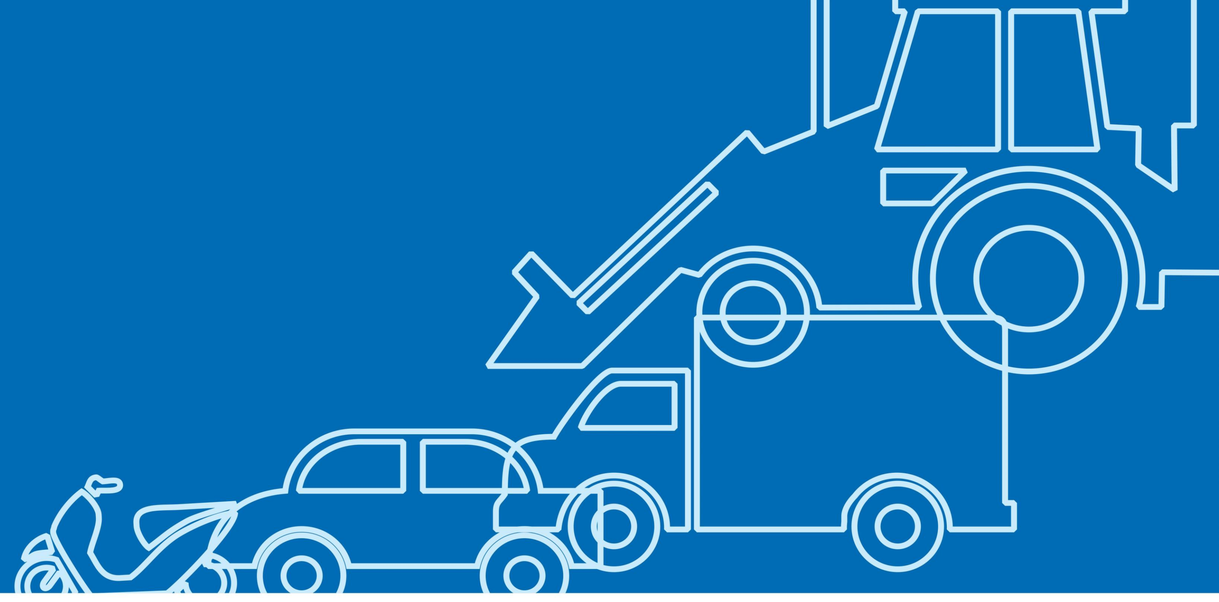
Progress through Research

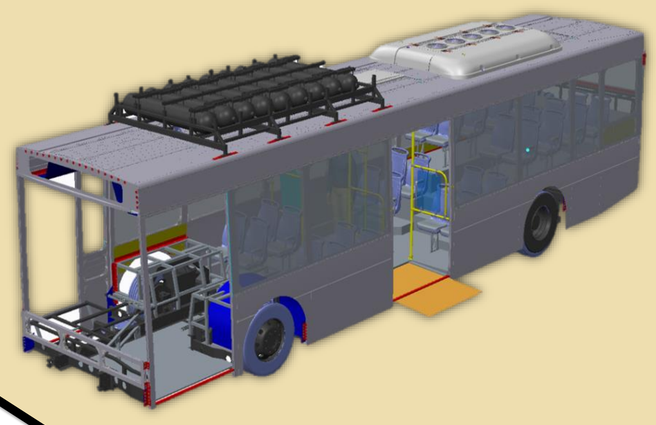


50 YEARS OF BUILDING AUTOMOTIVE EXCELLENCE
1966 - 2016

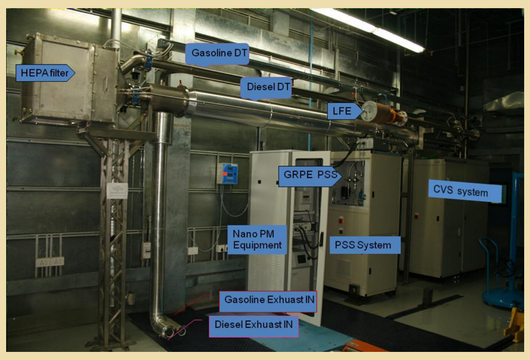
Projects of National Importance
(Of Recent Years)

Striving for Affordable, Safe and Sustainable Mobility Solutions

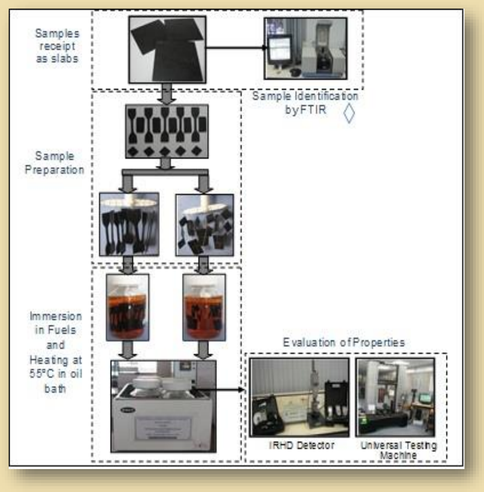
Design Guidelines for Lightweight City Bus with Aluminum Superstructure



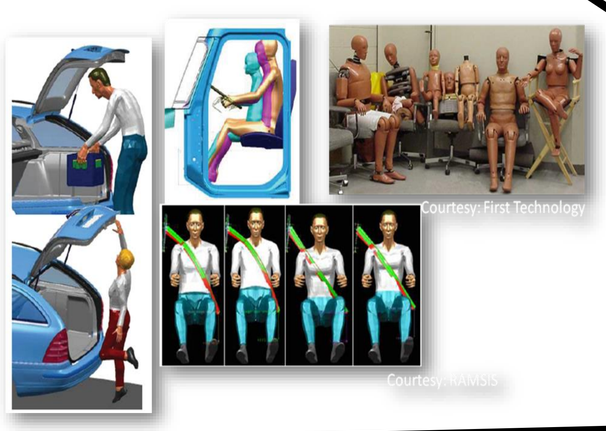
Study of Nano Particles from Vehicle Exhaust



Material Compatibility with E20 and Biodiesel



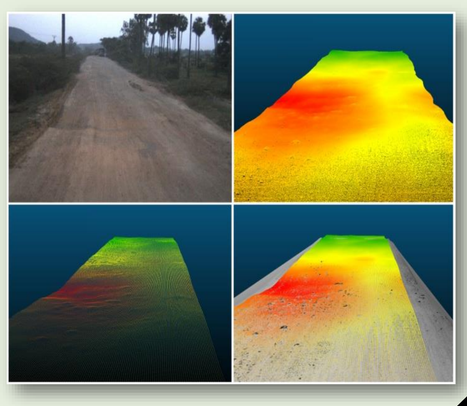
Anthropometric Databank

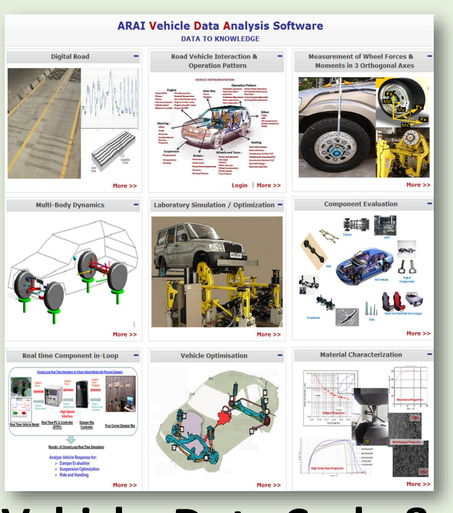


Translating Indian Aspirations into Engineering Scripts

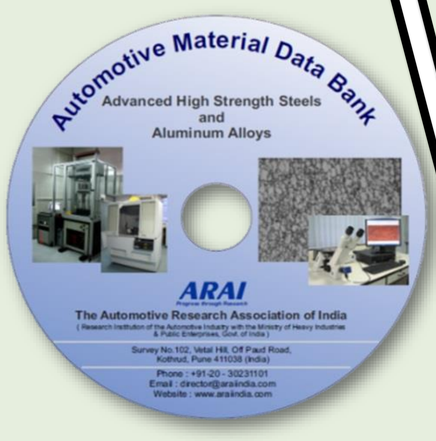
I&C Centres

Indian Road Profile 2D-3D Databank

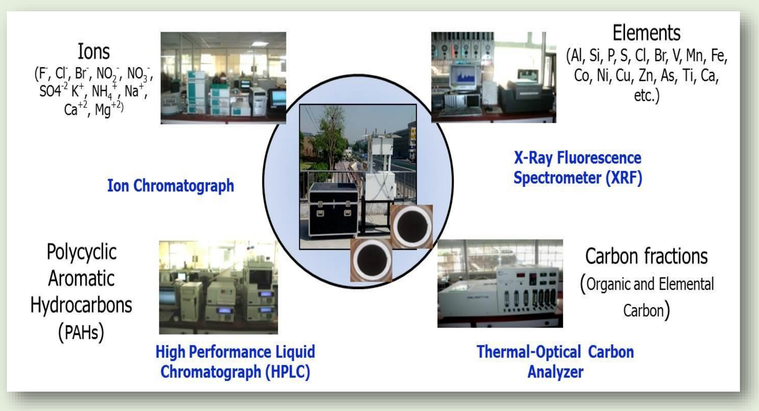




Vehicle Duty Cycle & Operation Pattern



India Specific Material Databank



Vehicle Source Profiles, Emission Factors and Air Quality Management

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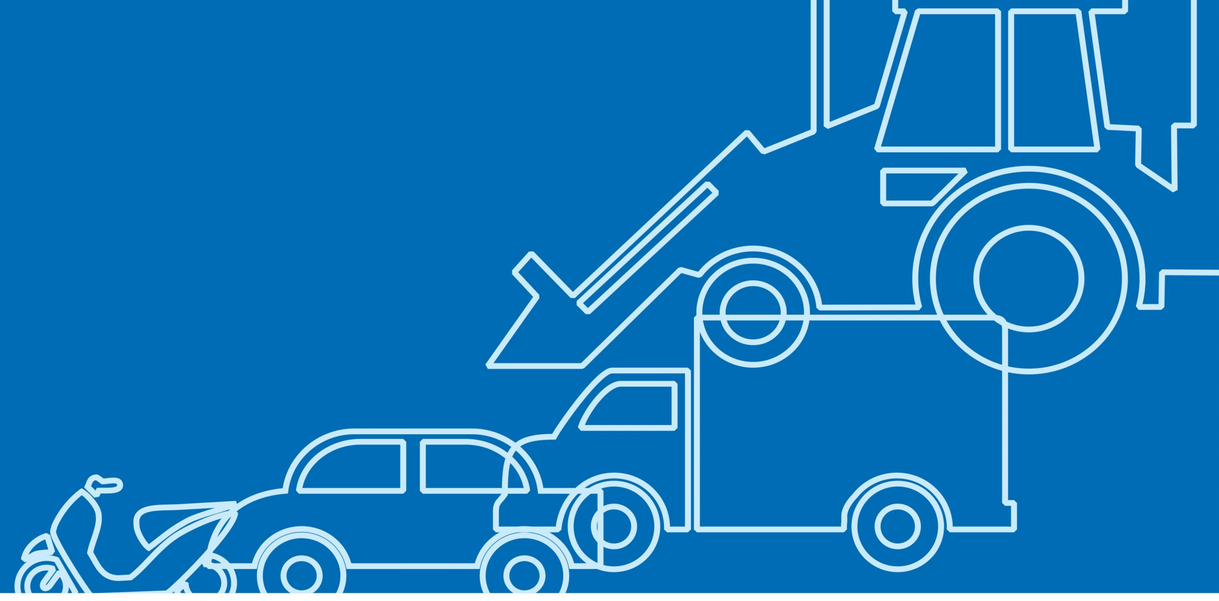
Progress through Research



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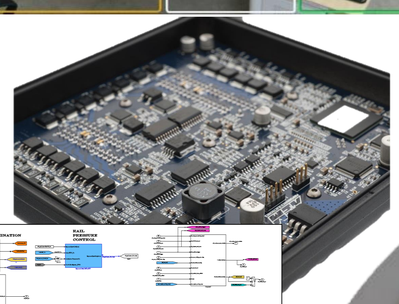
YEARS OF BUILDING AUTOMOTIVE EXCELLENCE
1966 - 2016

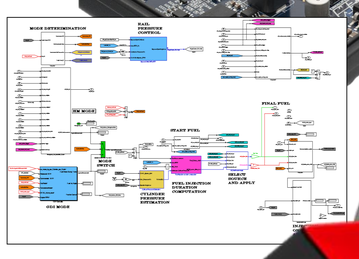
Advanced Technology Projects

- Development of Off-line and Real-time Simulator for EV and HEV systems

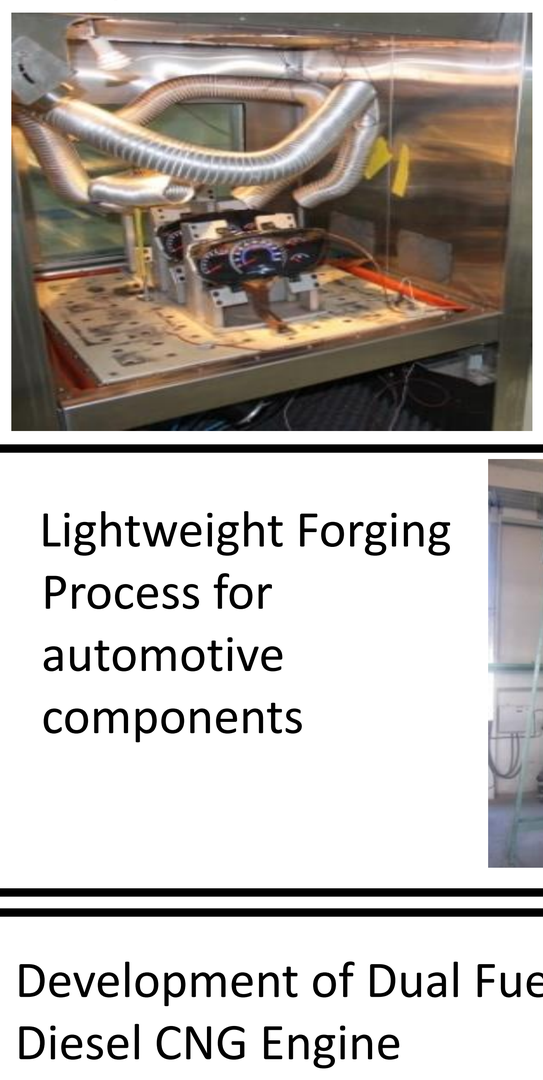
- Development of EMS ECU for single cylinder gasoline engine



- Development of control strategies for GDI EMS application

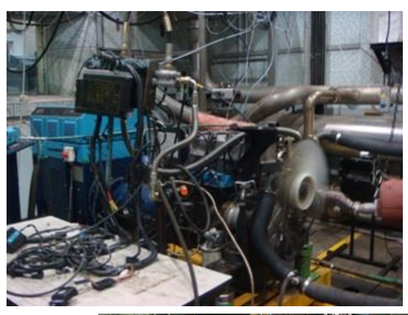


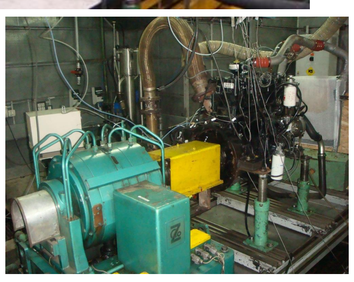
- Development of Accelerated Test Program for Life Prediction of Auto Electronic Components

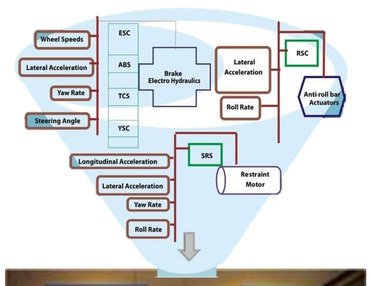


- Lightweight Forging Process for automotive components

- Development of Dual Fuel Diesel CNG Engine
- Development of 6 cylinder HCNG (H2+CNG) engine
- Development of diesel engine using HCCI combustion concept
- Design & development of high performance 3 cylinder CRDI Euro 4 diesel engine
- Direct Injection Technology for CNG Engine



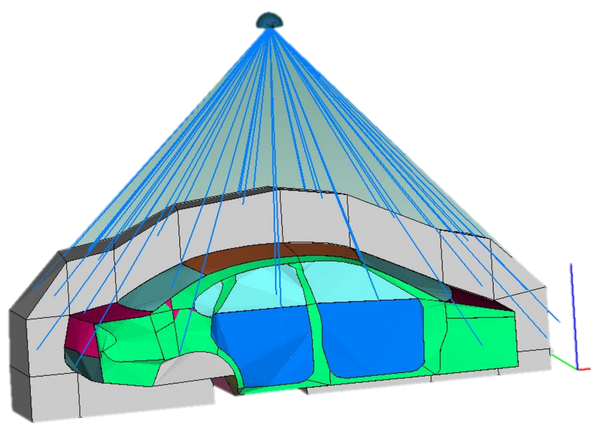


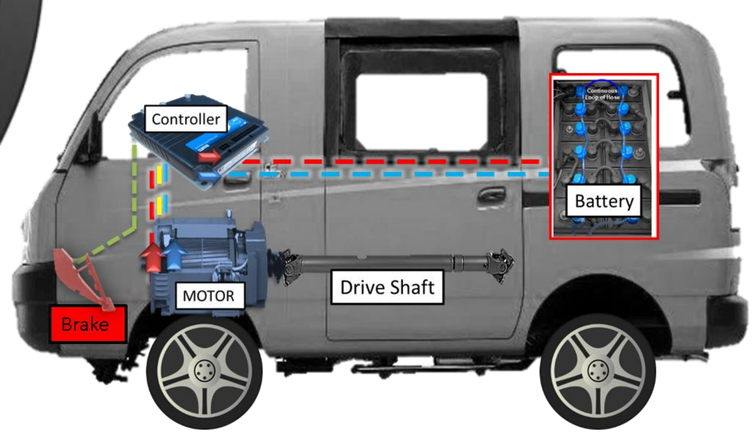


- Development of Integrated Safety System
- Mathematical modeling for chassis and suspension

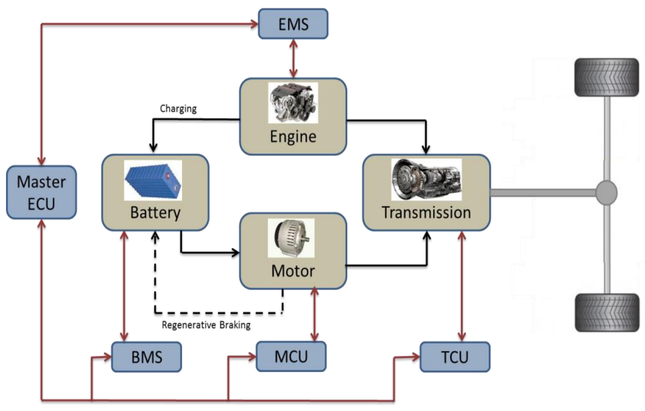
- Development of Semi-Active Suspension
- Development of Electronic Power Assist System (EPAS)

- Development of Adaptive Front Lighting System (AFS)
- Statistical Energy Analysis for Noise Control





- Building a prototype EV SCV for intra-city application
- Development of control systems and transmission for Parallel Hybrid Small Commercial Vehicle



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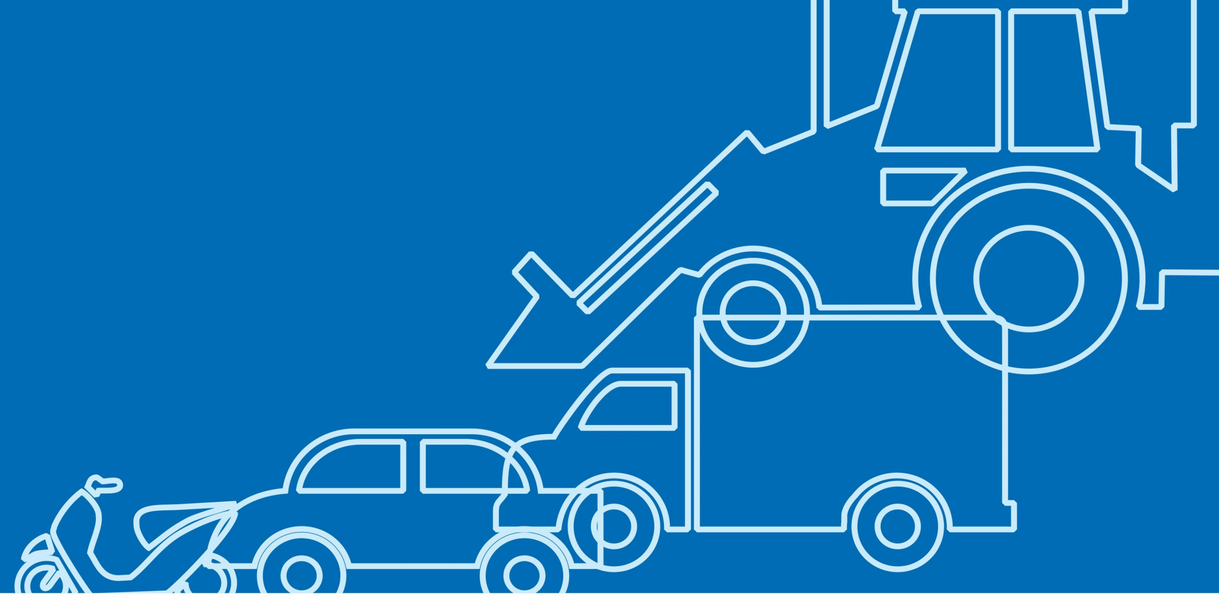


ARAI 50

YEARS OF BUILDING AUTOMOTIVE EXCELLENCE
1966 - 2016

Adaptation of Energy Storage Devices Technology to Automotive Applications

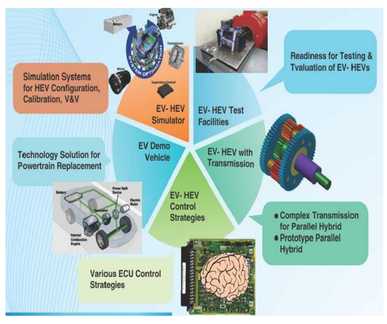
In association with

इसरो isro

Bringing Space Technology To Automotive

Automotive Application Engineering + **Li-ion Cell development & adaptation to space application** = **Adaptation of Li-ion technology for Automotive Application**

ARAI® Progress through Research



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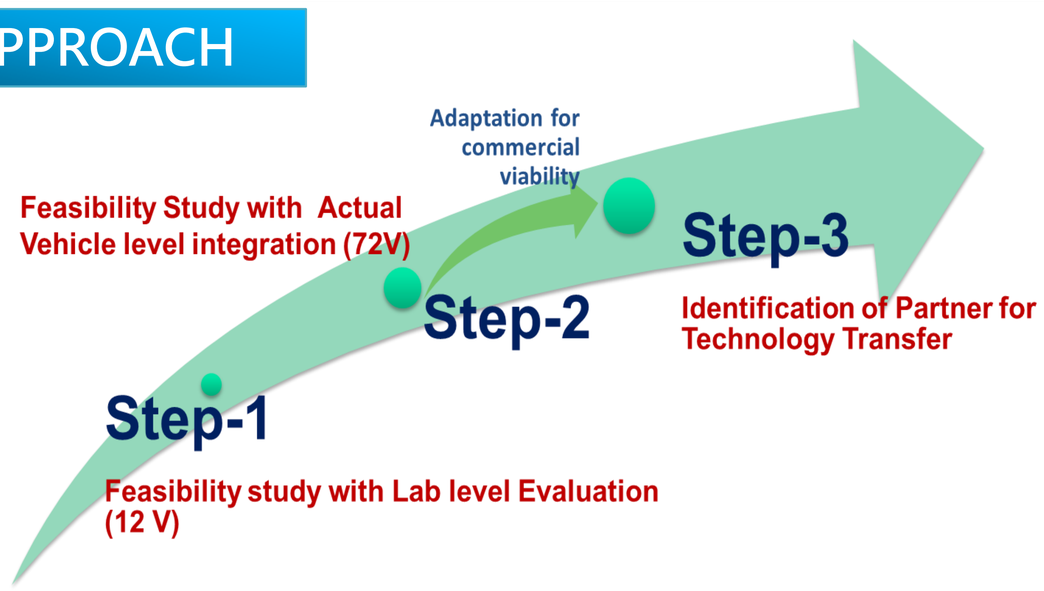
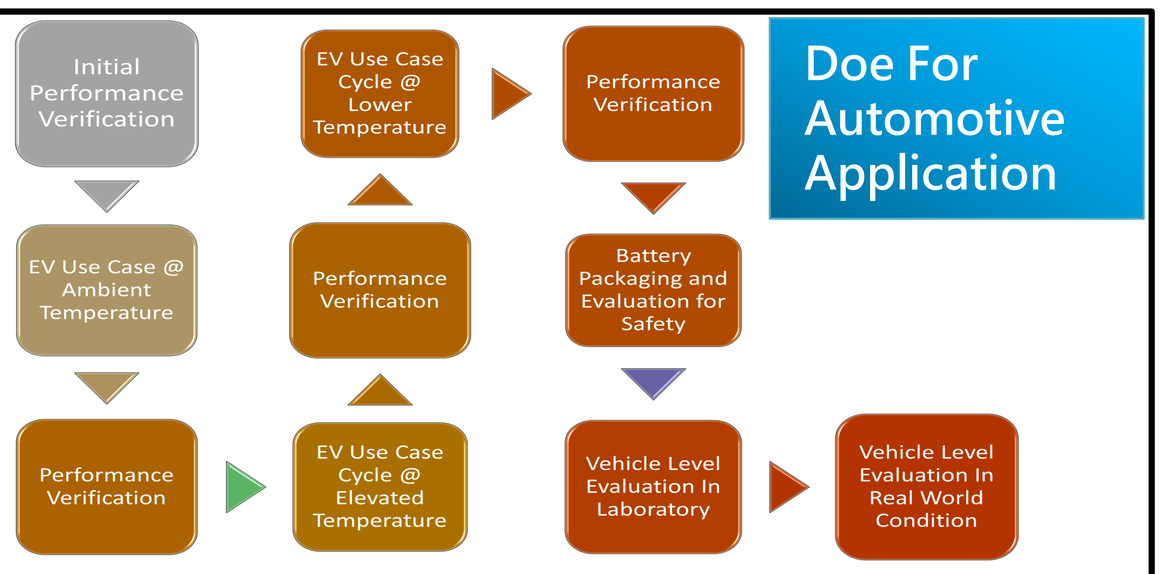
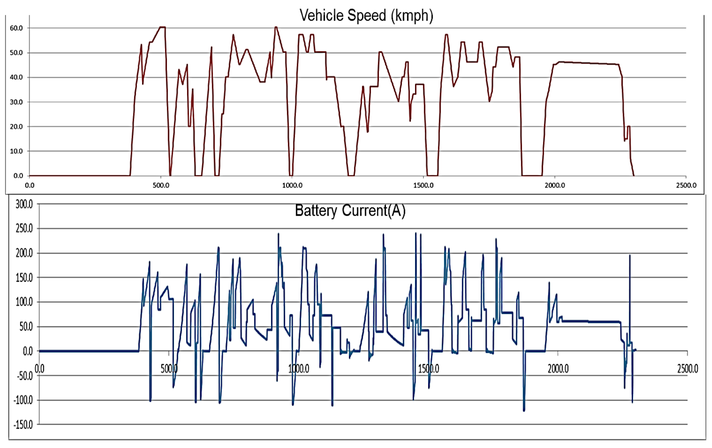
APPROACH



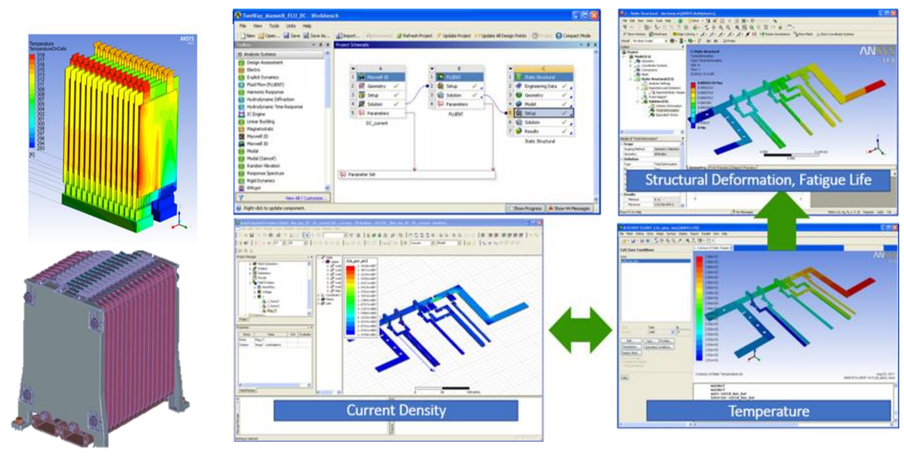
Doe For Automotive Application

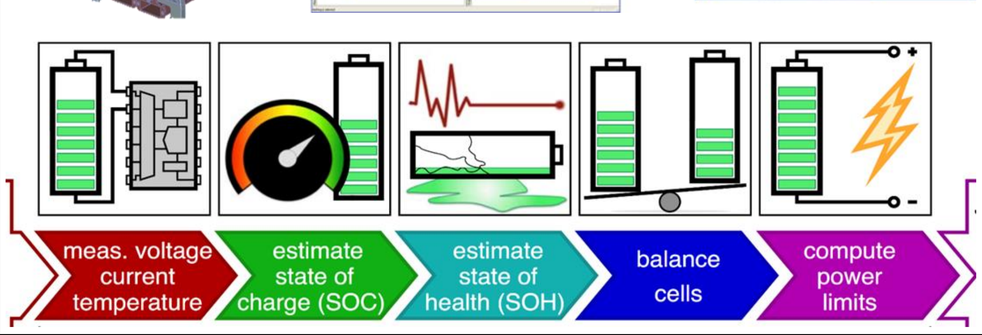


INDIA SPECIFIC DRIVE CYCLE EVALUATION

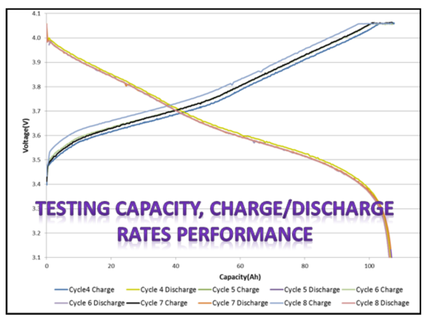


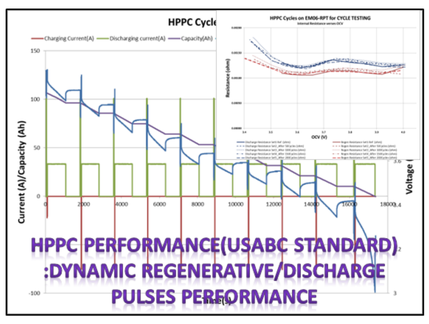
CELLS TO BATTERY PACK

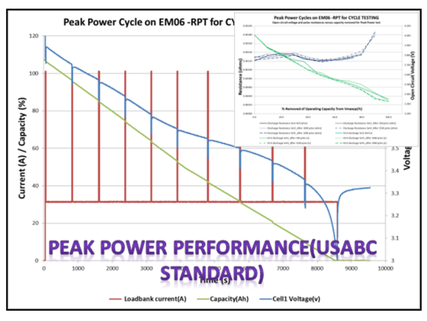


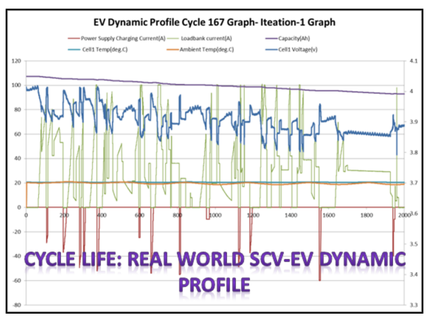


Cell Test Results









VEHICLE INTEGRATION

- Vehicle level validations
- Range
- Safety Considerations
- Component Placement