EV R&D in CAERI

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China Automotive Engineering Research Institute

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I. Profile of CAERI

II. EV R&D in CAERI
History

- Established in 1965 by the central government
- Named *China Chongqing Automotive Research Institute* before, renamed as *China Automotive Engineering Research Institute* in 2007
- Today we have more than 1500 staffs, occupied area about 480,000 m²
- After 46 years, CAERI has become one of the most important automotive institutes in China, which research and development scope including:
  - Vehicles and components development
  - Testing and research
  - Products inspection and certification
  - Engineering Consulting
Accomplished three history tasks of auto technology introduction drawing into China, French Berliet, Austrian Steyr and Japanese Isuzu.

Designed and developed hundreds of autos and engines, also does body-design, light weight and performance development, structure analysis design, chassis integrated design, prototype vehicles, and test evaluation.
The first national engineering research center in China automobile industry

R&D and products contributes the promotion of more than half million CNGV and LNGV in China
Approved by MOST, this lab’s conclusive fundamental and engineering research will be completed to better the noise and vibration-related performance plus the auto safety in China.
The National Key Laboratory of Automotive Lightweight Engineering

- Established by CAERI, SAE-China and Chinese OEMs
- Now we are carrying out the lightweight materials and processes common basic technologies, databases, and related standard-setting work

Lightweight structure design
Lightweight material research
Lightweight process design

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China Automotive Engineering Research Institute
CAERI has founded the National Center of Vehicle Quality Supervision & Inspection to conduct quality inspection, development-oriented test evaluation.
Electric Vehicles Developed by CAERI

New concept EV on 2011 Shanghai Auto Expo

EV TAXI

2 tons EV

REEV For Chery

Gas/NGV ISG Hybrid

Hybrid Bus
MOST 863 Programs — Benchmarking and database

- BEV
- Plug-in
- REEV
- Full Hybrid
- Mild Hybrid
- Power train of HDV
- Chargers

- Benchmarking more than 12 cars and two powertrain of bus, five chargers
- Building up the developing database for the industry
- Authorized by MOST, inspect other vehicles and parts developing projects in 863 program
MOST 863 Programs —
Researching test Codes and Standards

- Supported by MOST, researching the testing and inspection methods of for REEV, powertrain, battery etc.

- Providing more the ten test procedures and eight suggestions to the industry and national standards
MOST 863 Programs — Next Generation EV Development

- Supported by MOST, develop the next generation EV
  - 4WD motor in Wheel powertrain
  - Flexray communication system
  - AutoSAR system
Contribution to China EV Demonstration

- Finished two projects, *Research on technical solution of large scale electrical vehicle demonstration in Chongqing*, *Research on industrialization of electrical vehicle in Chongqing* - funded by EF of US, the China Sustainable Energy Program

- Tested and evaluated the buses and cars demonstrated in China
Role in SEVIA

- Supported by SASAC, 20 companies organized the EV industry alliance in China.
- In SEVIA, CAERI acts as the secretary unit for building up the standards and code of the alliance inside, promotes those to be the standards of the national.
- CAERI also responses to build up the independent test center for the members of SEVIA.
Role in CERC-CVC

Testing and Evaluation

Standards

Union of Next Generation EV

CERC-CVC
International cooperation

- CAERI is the International cooperation Base which is authorized by Chinese government
- CAERI has carried out lots of co-projects with international institutes and companies
Conclusion

- CAERI acts important role in the field of EV R&D, evaluation, and standards making in China

- We would like to co-operate with US partners in this field to promote the development of EV
Thanks for your time!