



中国汽车技术研究中心  
China Automotive Technology & Research Center



為協助政府把好汽車技術質  
量關提供優質而公正的服務，為  
發展我國的汽車工業作出更大  
的貢獻。

題贈

中國汽車技術研究中心

成立廿周年

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## **Part I: Profile**





## 第一部分 概 况



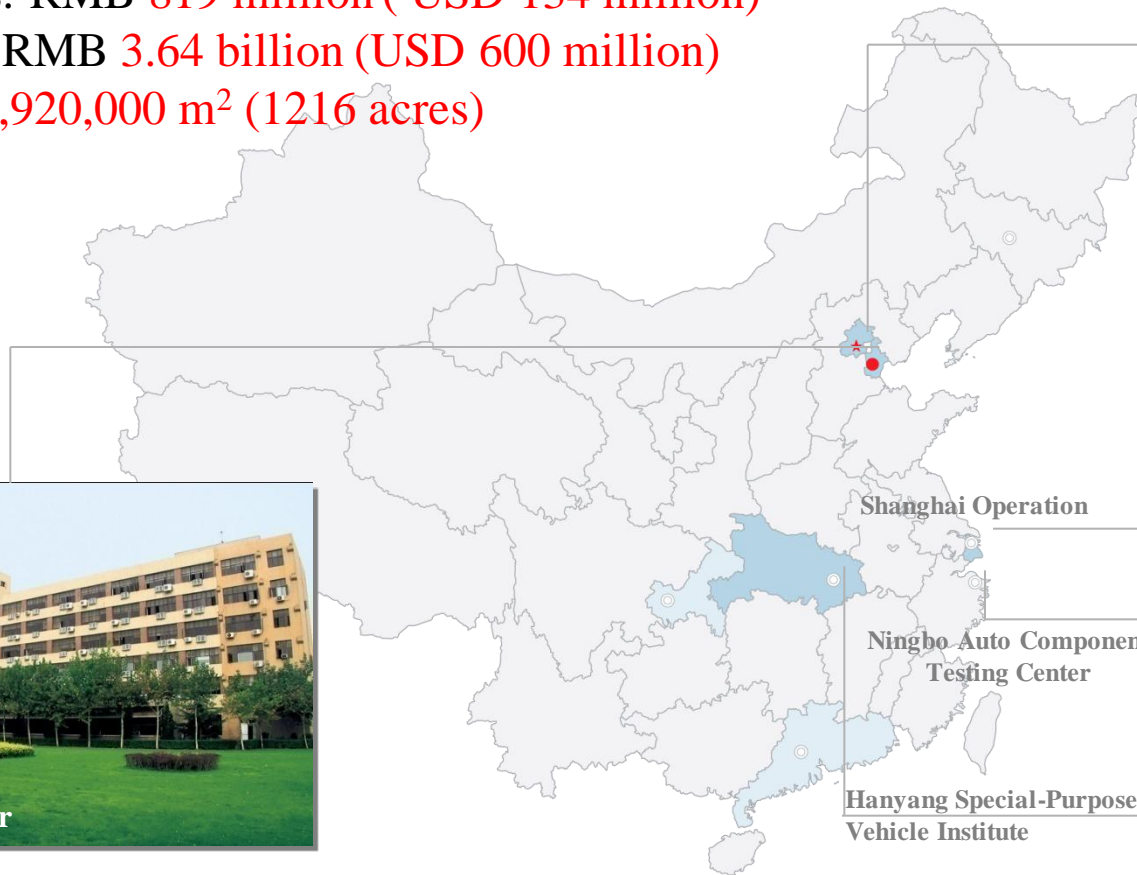
### CATAC Development History

- **May 25, 1985:** Established in Tianjin;
- **1985~1999:** R&D Center directly under government;
- **1999:** Independent Science and Technology Enterprise;
- **From August 2003:** Turned over to SASAC (State-owned Assets Supervision and Administration Commission of the State Council).



# 第一部分 概 况

- Total Assets: RMB 4.918 billion (USD 800 million)
- Fixed Assets: RMB 819 million ( USD 134 million)
- Net Assets: RMB 3.64 billion (USD 600 million)
- Land Area: 4,920,000 m<sup>2</sup> (1216 acres)







## 第一部分 概況

### Main buildings of CATARC New Headquarters



- Office building and auxiliary structures
- Parking building
- Engine Laboratory
- Vehicle Emission Laboratory
- Vehicle Durability Laboratory
- Performance Development Laboratory
- Component Laboratory
- Automotive Electronics Laboratory
- Automotive Safety Laboratory
- New Energy Vehicle Laboratory
- Energy Center and supporting facilities

CATARC New Headquarters occupies an area of 300,000 m<sup>2</sup> involving total investment RMB 2 billion.



第一部分  
概 况

**CATARC**

**Automotive Standardization Research Institute**

**Auto Testing Research Institute**

**Auto Industry Planning Design and Research Institute**

**Auto Technical Information Research Institute**

**Quality System Certification Center**

**C-NCAP Management Center**

**Beijing Operations (Beijing CATARC Technology Center)**

**Shanghai Operations (Shanghai CATARC Automotive  
Technology & Research Center)**

**Hanyang Special Purpose Vehicle Institute**

**Automotive Engineering Research Institute**

**Automotive Data Center**

**Post-doctoral Research Center**

**China Automobile Forensic Authentication Institute (Beijing)**

**Yancheng Proving Ground Co., Ltd.**

**Tianjin CATARC Auto High-tech Company**

**Tianhang Company**

**Tianjin CATARC Century Hotel**

**China Vehicle Technical Service Center**

**Tianjin Qingyuan Electric Vehicle Co. Ltd.**

**Tianjin Tianfeng Automotive Interior Trimming Co., Ltd.**

**Tianjin SwARC Automotive Research Laboratory Co., Ltd.**

**Shanghai CENAT New Energy Limited**

**CATARC Motor Vehicle Quality Testing Center (Ningbo) Co., Ltd.**

CATARC



第一部分  
概況

**3201 Employees**

**Retired: 245**



**Professor-level: 41**

**Senior engineers: 271**

**Doctors: 70**

**Masters: 380**

**Bachelors: 558**

**Management Team**

**Upper level: 6**

**Middle level: 63**

**Basic level: 107**

**42 years old on average**





## **Part II: Main Business**



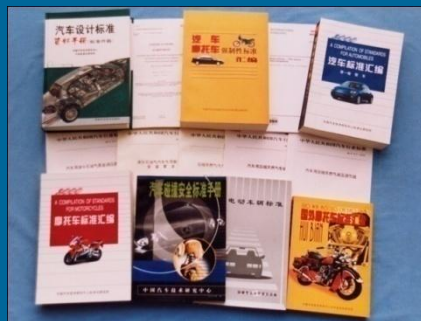
第二部分  
主要业务

Industry Service:  
Oriented to the government

# 1. Auto Standardization and Technical Regulations

*National technical administration of auto standardization and regulations with the major functions as,*

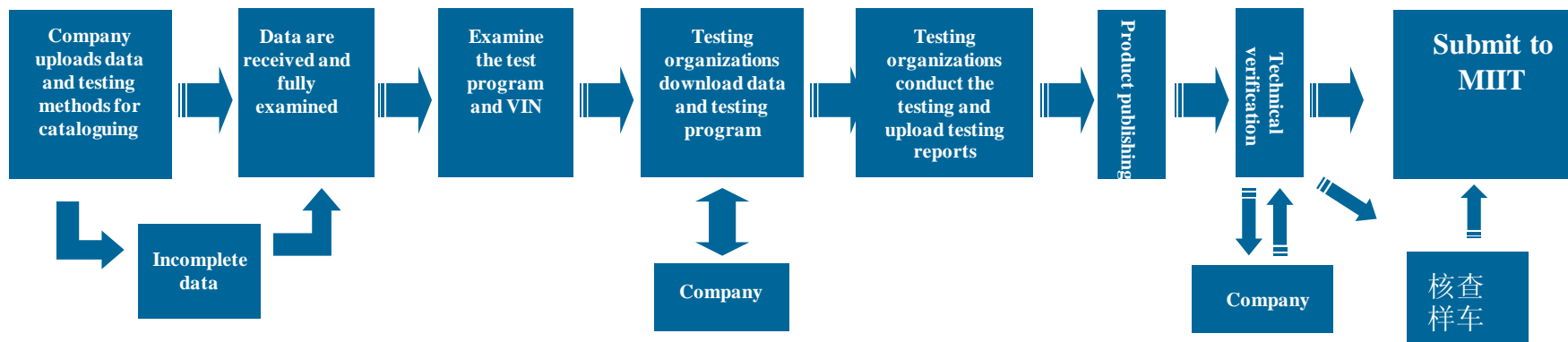
- Secretariat of National Technical Committee of Auto Standardization (SAC/TC114)
- Secretariat of Automotive Branch of China Association for Standardization
- Centralized administration body for international standards (ISO/TC22 and 177, IEC/TC69, IEC/CISPR/D) in China
- Secretariat of Chinese WP29 Workgroup (C-WP29)
- Organize the research of Chinese automotive standard system and the annual automotive standard formulation and modification among the industry
- Formulate the automotive standards and technical regulations in key areas like energy saving, safety, environmental protection, new energy vehicle and so on
- Participate in international standardization work and international automotive technical standard harmonization like ISO/TC22, UN/WP29 and so on



## 2. Administration of Automotive Companies and Product Catalogue

*Entrusted by Ministry of Industry and Information Technology (MIIT), conducting the following issues:*

- On-site technical audit
- Drafting technical documents and managing the expert database
- Verification of the conformity of new vehicle types with already approved types
- Examining VIN (Vehicle Identification Number)
- Receiving and examining company application materials for cataloguing







### 3. Investment Consultation and Evaluation

- Responsible for investment consultation and evaluation entrusted by NDRC and MIIT, and provide consultation and advice to the government on the investment projects.
- Up to date, nearly 60 ratification-category investment project evaluations for the automotive industry entrusted by NDRC have been accomplished; entrusted by NDRC and MIIT, CATARC has been undertaking the work of evaluating the automotive category investment project which are the special programs of industry revitalization and technical improvement; evaluations on 146 investment projects from within the central government budget have been accomplished.

#### *Partnership with*

FAW, Dongfeng Motor Corp., GAIG., SAIC, Chana Corp., Changfeng Motor Corp., Jiangling Motors Corp., Chery Corp., etc..

## 4. Administration of WMI/VIN

- For domestic auto manufacturers, receive their WMI applications and ratify those applications and register their VIN;
- For imported auto makers, register their WMI and VIN;
- Inspect VIN;
- Accept the applications for corporate title code of domestic automakers and register relevant modification.

## 5. Testing

### 10 Areas of testing :

- Emission and energy saving
- Full-scale vehicle crash
- Simulated crash
- Auto component
- EMC
- Lighting and electrics
- Vehicle research and development
- New energy vehicle
- Vehicle-type determination of new vehicle product
- Physical and chemical analysis of emission







第二部分  
主要业务



- National Passenger Car Quality Supervision and Testing Center → SAQSIQ
- Imported and exported vehicle accreditation lab → SAQSIQ
- Authority of environment-friendly products assessment and emission testing → MEP
- National testing authority of new auto product application gazette → MIIT
- National testing organization of scientific and technical achievement authentication → MOST
- China Compulsory Certification (CCC) Testing Body → CNCA



## 第二部分 主要业务

Industry Service:  
Testing



- Investment budget: RMB 20 million each year;
- Independent, non-commercial;
- Having finished the assessments on 202 vehicle-types and will assess about 30 vehicle-types per year in future;
- The vehicle purchase and testing are independent from each other and we choose the well sold vehicles having entered the market in the past 2 years.

### *Assessment results published through the following media:*

- ◆ Over 30 TV stations including CCTV, BTV, Guangdong TV, Tianjin TV etc.
- ◆ Over 150 print media including Xinhua News Agency, Science and Technology Daily, China Youth Daily, China Automotive News etc.
- ◆ Over 30 famous websites including Sina, Sohu, PConline, Xinhuanet etc.



## 6. Yancheng Proving Ground

*Strive to build the world class third party technology service platform oriented to the Chinese automotive industry*

- RMB 2 billion total investment
- 60 km total test tracks
- The proving ground has all kinds of tracks and facilities that can satisfy the needs of certification test and R&D test for automotive products

### Main road facilities:

- ▶ 7.8 km 4-lane high-speed circuit
- ▶ Dynamic platform with the diameter of 300m
- ▶ ABS roads with various attachment coefficients
- ▶ Performance road, dry and wet handling roads, noise test road, test hills used for high speed testing and all kinds of performance roads for regulation tests, comfort road, low attachment coefficient circuit, low attachment coefficient platform, off road track, general road track and simulated urban road.





## 7. China Automobile Forensic Authentication Institute (Beijing)-CAFAI

As an independent third party, CATARC will always follow the fundamental principles of “scientific, stringent, objective and impartial” and provide high quality automobile forensic authentication service to the society as well as conduct the activities including the research and application of the theories, skills and technologies of automobile forensic authentication, in-depth investigation and analysis of various accidents, develop the solutions that can prevent all kinds of accidents and have technical collaboration and academic exchange with organizations home and abroad.

### *Main authentication issues:*

- Vehicle characteristics (performance, structure, configuration, etc.)
- Vehicle quality and accidents caused by poor quality
- Vehicles damaged in traffic accident
- Powertrain and components



CAFAI Lab



## 8. Engineering Design and Management

**CATARC owns the comprehensive Class A designing institute with over 20 years experience of engineering design.**

### **Main qualifications:**

- Investment project consultation and evaluation entrusted by NDRC and MIIT
- Class A engineering consultation
- Class A machinery industry design
- Class A engineering design
- Class A engineering and equipment general contracting and project management
- Class A project supervising
- GC2 and GC3 pressure pipeline design

### **Business scope:**

- Industrial and civil engineering design
- Production management IT system
- Vehicle manufacturing equipment
- Project management and general contracting
- Project supervising
- Lean management consulting
- Industrial research



## 9. Automotive Data Center

*We provide authoritative, accurate, convenient and detailed data service via data organizing and management and systematic research.*

### **Business scope:**

- Data organizing and maintenance
- Management and maintenance of CAMDS
- Building and maintenance of large-scale shared fundamental databases of the automotive industry
- Information integration, analysis and publishing of automotive industry development
- Design and development of information system
- ELV research and related service
- Market prospects in short, medium and long term
- Survey on automotive product quality and consumer satisfaction





第二部分  
主要业务

Industry Service  
Oriented to the market

## 10. Industry Policy Research and Project Consultation

**CATARC assists the government to do the research on auto industry policies and relevant soft science subject and provides service to industrial organizations and corporations.**

### **Business scope:**

Automotive industry planning, automotive taxation, import and export, bilateral trade policies, ELV and recycling, new energy vehicle, industrial damage and competitiveness evaluation, product management, investment management, market admission and relevant industrial management policy research, market and industry information consultation etc.



第二部分  
主要业务

Industry Service  
Oriented to the market

## 11. Periodicals and Internet

CATARC assists the government to manage the online systems as *Catalogue of Automakers and Products* and *Vehicle Qualification Certificate* and provides all kinds of services including professional database retrieving, industrial and market information etc.

### Business scope

- Building and maintaining the website:  
<http://www.autoinfo.gov.cn>
- Databases and yearly statistics about the industry
- <http://www.chinaspv.org.cn>
- <http://www.chinaev.org/>
- China Electric Vehicle Net
- China Alternative Fuel Vehicle Net
- Compile and publish the *Yearbook of China Auto Industry*, *World Auto*, *Motorcycle Technology*, *China Auto (English Version)*, *Special Purpose Vehicle* etc.





## 12. Industrial Forums and Events

CATARC organizes and sponsors all kinds of forums and events with diversified forms, extensive attendance and substantial influence in the industry. Those events are the communication platforms between the government and the enterprises and research institutes.

### **Main renowned forums and events:**

International Forum (TEDA) on Chinese Automotive Industry Development - IFCAID (TEDA), China Road Traffic Safety Forum, International Forum on Chinese Special Purpose Vehicle Industry Development, International Forum on China Auto Safety Technology Development, International Seminar on Auto NVH Control Technologies, High-level Seminar on China Automotive Engine, China Auto Safety Exhibition Tour, Beijing International Energy Saving and Environmental Protection Vehicle Exhibition and Clean Vehicle Technology Innovation Forum, ANGVA Convention and Exhibition etc.



IFCAID (TEDA)





## 13. Quality System Certification and Training

**Tianjin CAQC Certification Center, an affiliate of CATARC, is an authoritative certification and supervision organization for the automotive industry management system approved by CNAS . It boasts many certification qualifications like ISO9001 quality management system, ISO14001 environment management system and OHSMS vocational health safety management system. The China Jiuding Automotive Supplier Certification Co., Ltd. (CASC) held by CAQC is the only domestic certification agency authorized by IATF and can conduct ISO/TS 16949 management system certification.**

### **Business scope:**

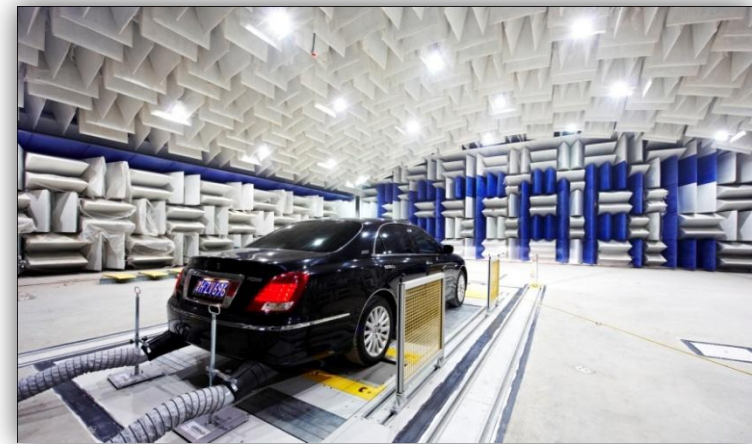
- ISO 9001, ISO/TS 16949, ISO 1401 and OHSMS
- Automotive product inspection immunity auditing
- WMI on-site inspection
- Supplier auditing entrusted by whole vehicle companies (the second party auditing) and help the supplier enhance their quality
- Training and advising on management system for various kinds of enterprises
- Quality and environment certification for dealers and repair stores
- Deal assessment entrusted by whole vehicle companies

## 14. Automotive Engineering Research

**Via the open research style, we focus on the study of the key and common technologies in the automotive industry so as to empower the technical progress of the Chinese automotive industry.**

### *Major fields of technology research and engineering:*

- Research on common fundamental technologies and key technologies of automotive passive safety engineering
- Research on automotive electronic technologies and research on the common technologies of active safety
- Research on the common key engineering technologies of vehicle NVH
- Research on the common technologies of vehicle emission and energy saving
- Research on the technologies of new power system
- Database construction of automotive development
- Establishment and application research on common technology platform



**Performance Development Lab**

## XV. Management Technology

### *Management and training*

- Registered internal auditor training body authorized by the government
- Training and consultation focused on QS-9000 and ISO/TS 16949
- Training on new automotive technologies, quality management and lean manufacturing, in cooperation with SAE, AIAG, Motorola, etc.



### *Lean Production*

- Lean concept training and lecture
- Introducing the technologies of lean production into customer's business
- Plan and design of JIT production system
- Establish supervision and management system of production quality







第二部分  
主要业务

## 15. International Communication and Collaboration

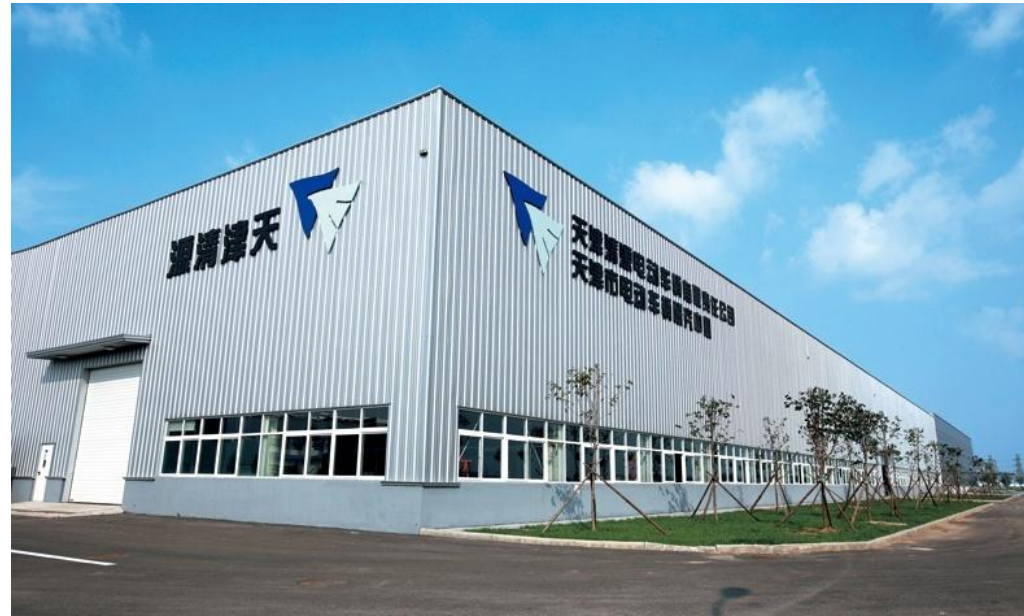
We have been maintaining long term collaborative relationship with SAE International, JASIC, JARI, MIRA, TUV, GM, Ford, BMW, Mercedes-Benz, Honda, Nissan etc.

We have established joint ventures with Southwest Research Institute and POLK company in USA and ENAX Inc. in Japan. We also signed collaborative agreement with Energy Foundation, GE, Bosch, Argonne National Laboratory, Toyota, Continental, Volkswagen, Korean Automotive Research Institute, Michelin, PSA and NAMI.



## 16. EV industry

- Undertaking several major EV projects of the national 863 program and Tianjin key scientific and technical projects and having obtained over 20 patents and science research achievements;
- In the clean energy vehicle industry, we own the capabilities as whole vehicle and key component development, vehicle common technology research and vehicle and component testing and evaluation.
- The independently developed and manufactured pure electric vehicles and components have entered American market in batches;
- Having passed the market admission examination of new energy vehicle and owning the qualification of “Special-purpose vehicle manufacturer” authorized by MIIT;
- Owning the reputation of the biggest EV R&D and commercialization base in Asia.







## 17. Li-ion Traction Battery

Shanghai CENAT New Energy Ltd. is a joint venture cofounded by CATARC, Japan ENAX Inc. and other companies involving total investment RMB 1 billion. CATARC is the holding party among all the shareholders. The main businesses of this company cover the R&D, production and sales of Li-ion battery.

### Main businesses:

- Battery material R&D
- R&D, production and sales of Li-ion traction battery for automobiles
- R&D, production and sales of Li-ion battery pack
- Development and solutions for vehicle power battery system
- R&D, production and sales of energy storing battery.



Battery module

i CENAT New Energy Ltd.



## 18. Hybrid Powertrain

The absence of high performance power coupling enforcer and supporting control technologies has always been obstructing the development of the hybrid vehicle industry in China. In order to tackle those issues, CATARC has developed the dual planet hybrid powertrain product for deep parallel series hybrid vehicles.

### Advantages of CATARC Hybrid System (CHS) product:

- Light-weighted, high efficiency, integrated structure, energy saving and practical
- The self weight ratio of the powertrain is 60% less than the parallel series featuring “electric generator, clutch and electric motor” with the driving force enhanced by 50% and total efficiency by 10%.
- CHS itself boasts continuously variable transmission which can save fuel by 40% in urban cycle and 25% in comprehensive cycle.



CHS product



第二部分  
主要业务

High-Tech Industry

## 19. Catalyst Converter and Exhaust System Assembly

Business capabilities:

- Owning the TS 16949 quality system certification and ISO14000 environment management system and OHSMS 18000 vocational health safety management system certification.
- R&D and manufacturing of exhaust system assembly products.



Catalyst converter  
products





*Thanks for your  
attention!*