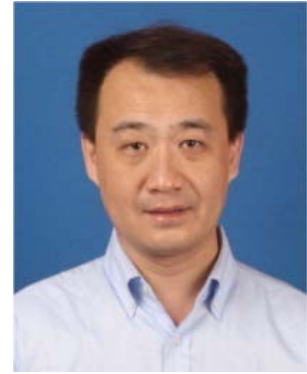


## Abstract

### **Material testing and precise modeling technology in vehicle lightweight development**

Xian Ming Meng, Ph.D  
Chief Expert  
China Automotive Technology & Research Center



Research on precise modeling technology for lightweight design of new energy electric vehicles

Serious environmental pollution and severe energy situation put forward urgent requirements for the replacement of transportation energy. Electric vehicles have become the development focus of energy transformation in the industry. The popularity of electric vehicles is getting higher and higher, and the safety problems caused by them have aroused widespread concern of the society.

The purpose of this speech is to improve the safety of battery pack and electric vehicle; Speed up the wide spread of electric vehicles in the society; Relieve energy and environmental pressure; Improve the technical system of power battery and system safety.

The speech contents:

1. Material performance evaluation and simulation model development
2. Mechanical property evaluation and simulation model development of joint
3. The extrusion experiments of cell, module and battery pack were carried out, and the equivalent model of battery pack was established
4. The structural safety of battery pack under bottom impact and impact conditions was studied
5. The structure material matching optimization of the battery case improves the structural safety and lightweight characteristics of the battery pack