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High Voltage Safety and Technical Training for New-energy Vehicle Industry



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Fit for the requirements of technical personnel

The problems of energy shortages and environmental pollution are worsening worldwide. Accordingly, the development of new-energy vehicles such as electric vehicles (EV) is likely to become a growing trend, a trend that high-tech talent in the arenas are in great demand. However, the continued development of EV technology, accompanied by the growing use of high-pressure systems such as battery and power management systems, motor drive systems and DC/DC inverter systems, will increase the risks of EV operation. Technical staff safety training, such as in how to avoid electric shocks in high-voltage environments, is thus of the utmost importance.

With funding from the German government, and in collaboration with Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM and Lucas-Nülle, TÜV Rheinland's Training and Consulting Department recently launched the first safety and technical training programme for new-energy automobile employees in Greater China. The programme provides comprehensive technical and staff development solutions to improve operational safety and skill levels, thereby developing high-quality technical teams.

World-class training team



TÜV Rheinland is the largest independent educational institution in Europe



Fraunhofer IFAM is one of Europe's largest application-oriented research organisations



Lucas-Nülle is a global leader in providing training and vocational education solutions

With over 140 years of history, TÜV Rheinland is now the largest independent educational institution in Europe. Every year, it offers more than 15,000 professional activities serving 200,000 individuals. We have many years of experience and a high-quality team in the E-Mobility field, allowing us to provide safety and reliability related solutions to the entire value chain.

Fraunhofer IFAM carries out research and development in the areas of shaping and functional materials and adhesive bonding technology and surfaces. It is one of the largest independent research organisations in Europe, covering the complete value chain from materials development to industrial applications, including personnel and workforce training in new technologies.

Lucas-Nülle GmbH has been developing and providing sophisticated high-quality training and education solutions in the key technologies of automobile, Lucas-Nülle works with 110 countries to help improving quality and efficiency in training and teaching. Leveraging its excellent technology and didactic, Lucas-Nülle becomes the most important strategy partner and solution provider with automotive industry, research institutes, and academies in training and education.

Training scope and trainers

Training level

- Level 1: Non-electrical work
- Level 2: Electrical work in the non-live state
- Level 3: Live work on high-voltage systems

Curriculum outline (according to Germany's I8686E standard)

- Basic knowledge of electric power technology
- First-aid measures for injuries arising from HV electricity
- Safety precautions to avoid electric shock and arc
- Safety and health measures working with HV electricity
- Five safety principles
- Responsibilities of electrical experts and management personnel
- High-voltage measuring equipment and line tests
- High-voltage system technology for electric cars
- Operational practices and demonstrations

Trainers

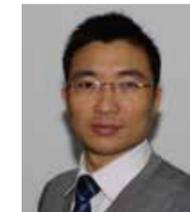
- German trainers provide on-site guidance
- Trainers from prestigious organisations: TÜV Rheinland and Fraunhofer IFAM
- All trainers are experienced in electric vehicle technologies and safety
- All trainers have more than 10 years of relevant employment experience



Dr Marcus Maiwald joined Fraunhofer IFAM as a project manager in 2006. Since 2012, he has been responsible for the organisation's Technical Training and Consulting business unit.



Stefan Suendermann worked for Bosch Services, where he became workshop manager in 2003. In 2011, he joined EV firm Move About as technical manager. Mr Suendermann has been a technical trainer with Fraunhofer IFAM since 2013.



Tao Peng has worked for automotive 4S stores for over 16 years, 10 years as technical expert and 6 years as a manager. He is the project consultant and expert for TÜV Rheinland's projects for Audi China and Land Rover China.



Penny Peng worked for BYD and CAPSA as the project leader and senior trainer. Now she is the senior trainer of TÜV Rheinland, responsible for the technical training development of electric vehicles and traditional vehicles.



TÜV Rheinland Automotive Technical Training Centre

The TÜV Rheinland Automotive Technical Training Centre boasts a world-class team of experts, and is equipped with state-of-the-art professional training equipment.

Classroom

Four theoretical training classrooms covering nearly 100 square metres, one IT training classroom, three practical work-bays and one high-voltage electric vehicle training workshop

Training centre area

Nearly 3,000 square metres

Training equipment

World-class equipment and practical training vehicles from such top brands as Bosch, MAHA, Lucas-Nülle and HAZET, to name just a few

Location

Kunshan, Jiangsu, 45km from Shanghai's Hongqiao Railway Station