EVS-GTR Water immersion test

1. Recent test in laboratory

*Test video will be shown in conference for confidential reason.

- Battery pack caught fire after soaking in salty water.

2. GB 38031-2020 Status

- GB 38031-2020《Electric vehicles traction battery safety requirements》 has officially published on 2020/5/12 and will be implemented on 2021/1/1.
- This mandatory national standard requires that all traction batteries of electric vehicle in the Chinese market must pass immersion test.

Appendix -- Immersion Safety Test Procedure

1. Requirement

The battery pack or system shall be subject to the water immersion safety test in accordance with paragraph 2, the following requirements shall be fulfilled:

——If the test is performed in Option 1, there shall be no evidence of fire or explosion;

——If the test is performed in Option 2, the IPX7 requirements shall be fulfilled and there shall be no evidence of leakage, housing crack, fire or explosion, the isolation resistance after the test shall be not less than 100 Ω/V.

2. Test Method

2.1 The DUT shall be a battery pack or system which has passed the vibration test in paragraph X.

2.2 Connect the wiring harnesses, connectors and other parts of the DUT in the manner of vehicle connection, and perform the test in one of the following two options:

——Option 1: Immerse the DUT into 3.5% (mass fraction) NaCl solution in the real vehicle assembly direction for 2h, the water shall be deep enough to immerse the DUT ;

——Option 2: Perform the test in accordance with the method and process described in IEC 60529. The DUT shall be completely immersed into water according to the installation state specified by the manufacturer. For DUT with a height less than 850 mm, the lowest point shall be 1,000 mm below the water surface; for DUT with a height equal to or greater than 850 mm, the highest point shall be 150 mm below the water surface. The test lasts for 30 min. The temperature difference between the water and the DUT shall be not more than 5℃.

2.3 Remove the DUT out of the water, let stand at the test ambient temperature and observe for 2h.

Thanks for your attention!