

APET - Advanced Power and Energy Transportation is a Hong Kong-based company. Our mission is to integrate the most applicable technologies into producing the most efficient, economically viable, habitable, and drivable electric vehicles.

Project Salamander is just a beginning...



TEAM APET-X is the only Team from Asia accepted as an official contender of 2010 Automotive X-Prize mainstream competition, for 4 wheels 4 passengers car.



Drive from garage into the green future



Advanced Power And Energy Transportation (HK) Co., Ltd. (A Member of the APES Group)
www.salamanderian.com

Dual Electric Power

APET power has been set to allow drivers and/or manufacturers to select various options of batteries ranging from NiMH, Lithium, and any other alternative future energy sources. For Automotive X-Prize, Salamander Prismatic NiMH batteries have been selected to enter the race. Such rechargeable battery system provides high performance and endurance to meet the competition's criteria.

Every full charge of 30kWh capacity will provide a normal range of 300km. 0-100kmh acceleration will be targeted at below 6.5 seconds.

Together with ZOE - Zinc Oxygen Energy fuel cells produced by our sister company, APET is proposing the most reasonable and sustainable POWER SOURCE for EV solutions.

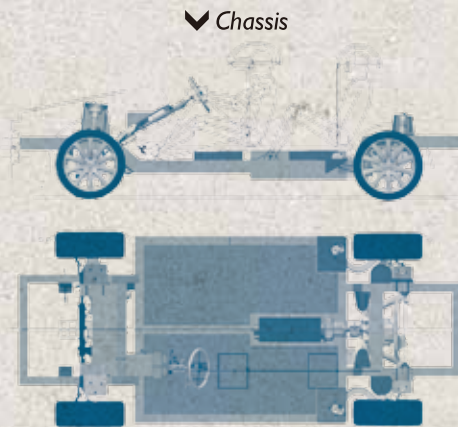


▲ Zinc Oxygen Energy fuel cell

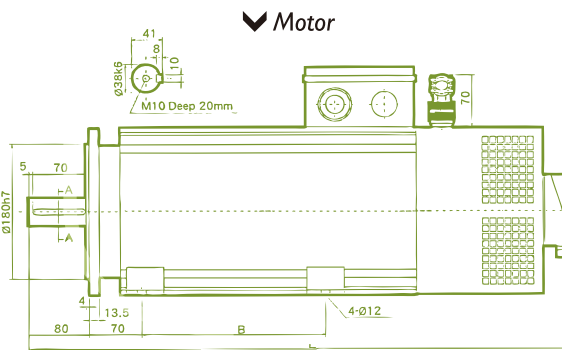
Hi-tech Chassis with Strong Protection

Our chassis is built with frame-based Aluminum Alloy to curb the overall weight of the car, but providing the extra strength at the front, back and both sides, to protect the integrity of the battery compartments from impact and damage. With such integrity, our chassis provides better stiffness and rigidity on side forces as well as foundation skeleton to protect passengers.

Thanks to the meticulous battery arrangement by our car design team, the weight distribution of the chassis is perfectly balanced, and the centre of gravity is very low, ensuring stability and drivability.



▼ Chassis



▼ Motor

Highly Efficient Motor

Salamander uses 85kg AC induction motor with 0.35mm steel coils, and the rotor is made of copper that further enhancing the efficiency of the motor. The efficiency has been rated at 94%+ and the motor is able to propel a 1500kg vehicle to reach 80MPH / 130kmh.

Since energy loss is a mere 5%, we can apply air-cooling to further enhance the overall efficiency when compared to liquid-cooling systems, saving both weight and space within the car body.

Intelligent Controller

With IGBT switches and high power performance logic, Salamander controller is smart enough to detect the feedback from motor, human, battery and the road, in order to select the best power output.

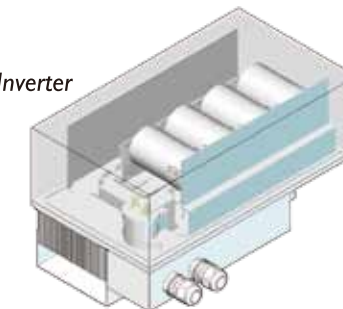
The multi-functional controller manages the speed of the motor by adjusting the frequency of the AC current going to the motor. Performance of the motor could be pre-programmed via APET CANBUS system.

Hence, the vehicle will perform according to driving habit:
SPORT MODE - immediate acceleration
EFFICIENCY MODE - extended ranges

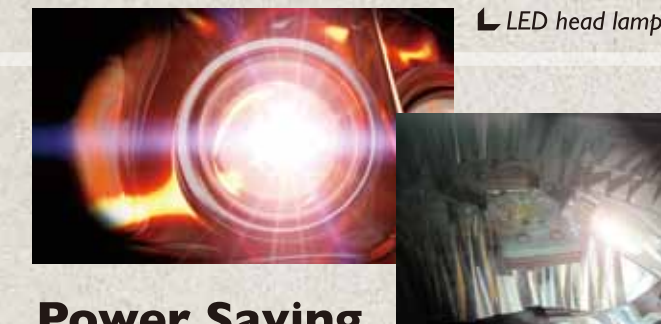
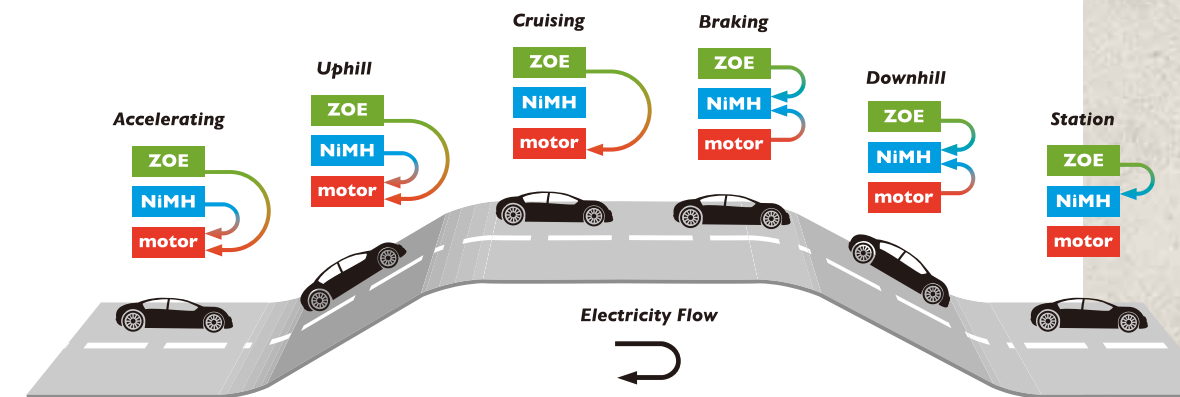
APET's Salamander controller also acts as an energy recovery system. During braking, downhill or gliding, it recovers energy directly from the motor's regenerative power, produced by the vehicle's own mass and inertia.

This is our E-E Hybrid System.

► Inverter



▼ E-E Hybrid Power Management



► LED head lamp

Power Saving Components

Our LED head lamp is a revolutionary product, with 20W power consumption, it is 1/3 the power needed for the traditional car lamps of 60W in H4 standards.

This reduction in power, seemingly small, represents 40W x 2 lamps = 80W power reduction. In EV, it is directly proportional to the mileage you are going to get out of the batteries. It is representing 0.8km more for every kWh (assuming 1kWh can run 10km). If the EV has 30kWh capacity, and the car lamp is always on, the LED would help the car run 24km more per charge!

Again, this is a very good demonstration of EFFICIENCY SAVES MONEY.

Open Source CANBUS

APET provides a solution that totally controls the electrical components and energy solutions by a self-developed specially-designed CANBUS. The system is written in LINUX open source code, allowing Salamander to be open for all talents of the world to contribute their solutions, and integrate with all component providers. All signalling is devised through fibre-optics and will not suffer from electro-magnetic interferences.

Salamander is a turn-key project allowing Salamander or any electrically powered vehicles to go directly into the production planning stage, by any car manufacturers or entities with adequate resources.

