

智能科技的马拉松比赛，IT业无疑是跑得最快的，科技改变生活的力量通过这个行业让我们能够切身感受到了。汽车业似乎就跑得慢了一点，但不知不觉中，“电动汽车”、“自动驾驶”及“车联网”等概念也不时地蹦口出来，表明工业时代这个传统力量十分稳固的行业，正在经历着巨变涅口。

通用曾在2012年的上海世博会上用一个展览馆的空间来描绘2020年时的上海交通。有点像是看《小灵通漫游未来》的感觉，虽然通用已经做出那样的车，总觉得2020年还是不太可能实现。

未来汽车科技有2点规则是必须遵守的：第一，可能性；第二，实用性。第一点，要求这个技术现在在实践中已经出现，而不是只在理论上存在可能；第二点，这个技术必须能够极大地帮助汽车业前进一步。无论是电动，还是混动？智能技术才是“硬道理”！

虚拟现实技术

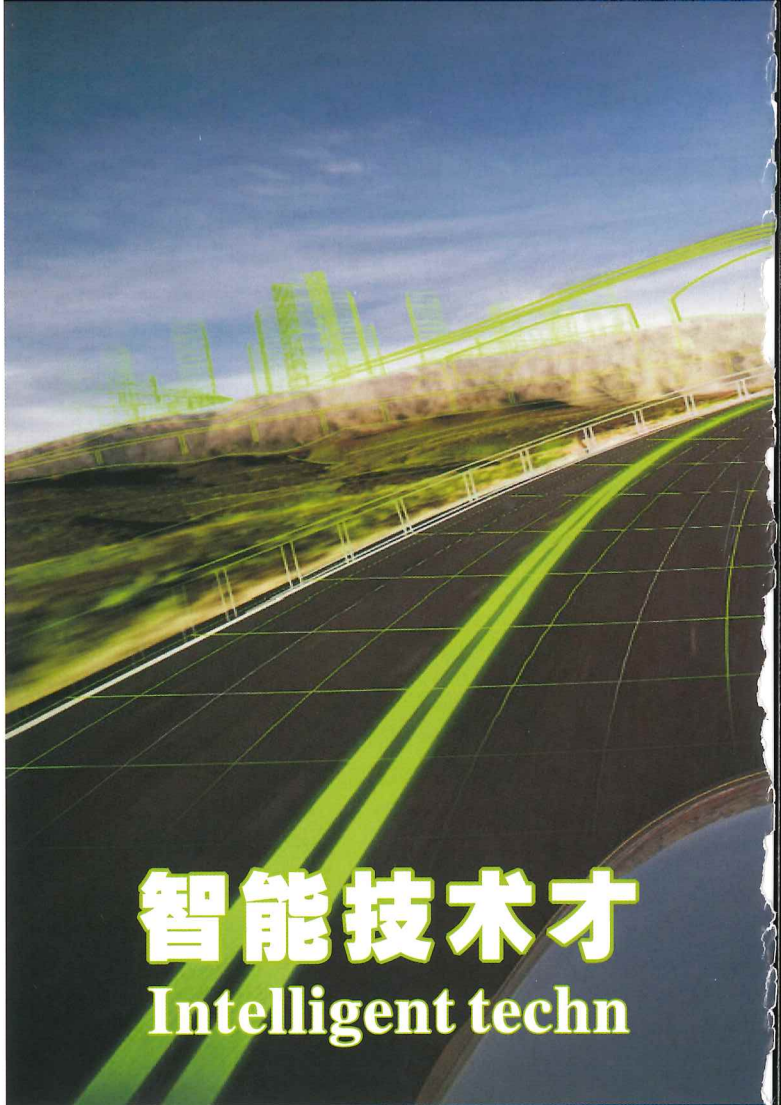
虚拟技术，英文名VirtueReality。它主要是通过计算机模拟真实世界的物体，“创造”出一个与真实世界极度相似的“虚拟世界”，让用户可以触摸、控制和改变这个世界的“虚拟物体”，得到良好的“虚拟体验”，犹如玩《魔兽世界》和《Minecraft》那样，获得某种真实感受。

目前，虚拟技术已经大量在汽车业运用，在汽车设计阶段，通用公司可以用虚拟现实软件为设计师投影出真实比例大小的车体和零件。设计师可以围绕这部尚未制造出来的汽车走动，观看每一个细节，甚至坐进车里观察内饰布局的合理性。

在制造时，虚拟技术可以在装配之前对所有的生产要素进行建模，然后工程师在这个虚拟世界里实际装配生产一次，查看有什么问题。日产曾用虚拟软件“试线”，模拟从仪表盘上拆除气囊组件，这时发现挡风玻璃碍事，总装线上的工人得窝着脖子干活，由于预先发现了这一问题，并得到了及时解决，避免了正式生产时的麻烦。

在汽车碰撞试验和风洞测试中，虚拟技术也可以大量替代实际测试，从而大大减少试验成本——不用撞毁真汽车和假人，而且可以多次重复。

不过，目前却还没有任何一家厂商，将虚拟技术运用到驾驶汽车上来。的确，按照传统的想法，“虚拟现实”或许只能用于培训驾驶员，一旦运用到真实现实的驾驶中几乎是



智能技术才 Intelligent techn

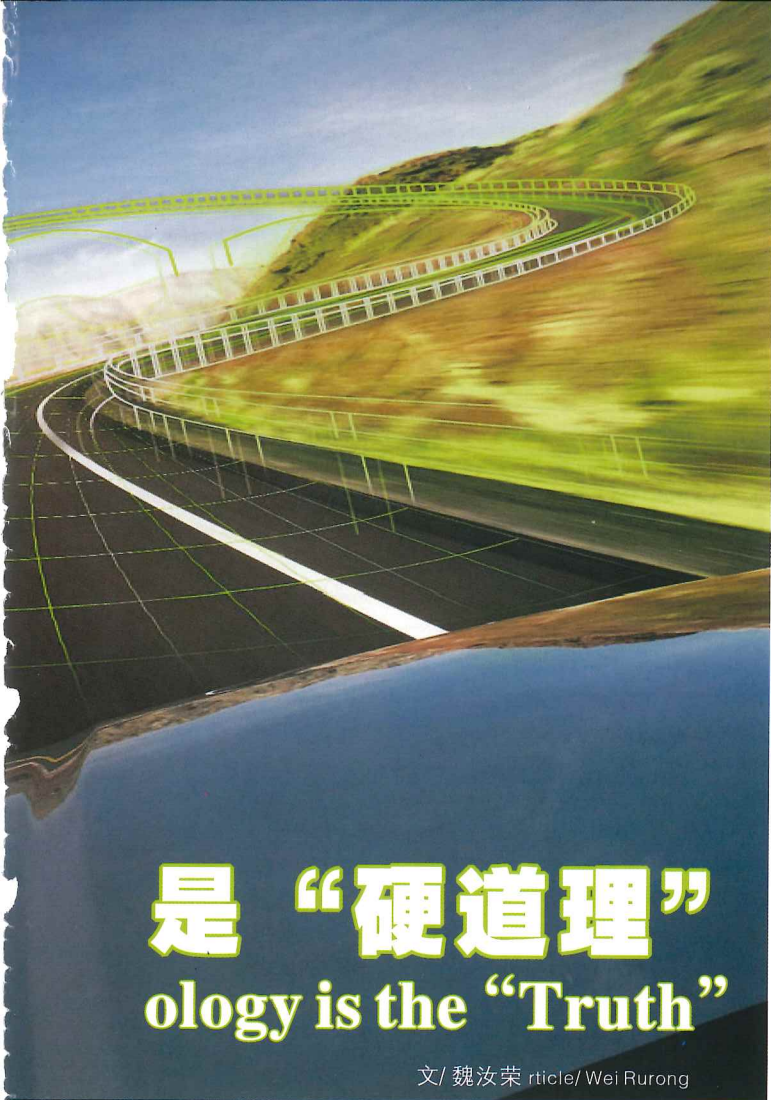
Intelligent technology Marathon, the IT industry is indeed the fastest, the science and technology power to change lives through the industry enables us to feel in every person. Car industry seems to run a little slower, but unconsciously, "electric vehicle", "autonomous" and "car networking" concepts are scampering out from time to time, also showing that the industrial age is a very strong traditional strength industry, of which is undergoing nirvana changes.

GM had described the Shanghai Traffic with a gallery space in the 2012 Shanghai world expo. A bit like the 《PHS roaming future》, though GM has made a car like that, always feeling that is unlikely to realize it in 2020.

There are two points of the rules must abide by the future car technology: first, the possibility; Second, practical. The first one, require the technology now has appeared in practice, but not only has the possibility in theoretically; the Second one, the technology must be able to help the auto industry to step forward greatly. Both of the electric vehicles and hybrid cars? Intelligent technology is the "a truth"!

Virtual reality technology

Virtual technology, the English name is "VirtueReality". It is mainly through the computer to simulate the real world objects, to "create" a extreme similar "virtual world" to real world, allows users to touch, control, and change "virtual objects" in the world, to get a



是“硬道理” Technology is the “Truth”

文/ 魏汝荣 article/ Wei Rurong

在生产“马路杀手”。

谷歌眼镜及名为META的虚拟现实眼镜，其实时的互联网交互技术对于驾驶汽车的意义是非常大的。《钢铁侠》的高富帅TonyStark控制高速飞行的钢铁侠盔甲，靠的是J.A.R.V.I.S——贾维斯这个沉着冷静又略萌的人工智能。与苹果Siri的最大区别是，这个人工智能不仅能帮助快速调出各种数据，还能实时投影在Tony的眼前，而且所有的投影都是可以操作的。谷歌眼镜可以在你眼前投射出地图，可以用语言来控制它拍照，而META眼镜则可以识别现实中的手和其他部位，并且让它们可以互动交流。

如果这项技术应用到汽车上，汽车就不需要在中控台上装上一块屏幕。人们可以按照个人喜好，把汽车内饰用胡桃木和旋钮装饰成最古典风格，挡风玻璃上则会适时出现各种信息——面对岔路走哪条？正确的那条路会透过玻璃高亮显示出来。前面可能出现危险不容易看清？标示危险的红圈会在玻璃上指出危险所在。所有虚拟信息都将和你看到的现实路况相结合，在不干扰驾驶的前提下最大限

good "virtual experience", to get a true feeling like playing 《World of Warcraft》 and 《Minecraft》。

At present, virtual technology has been applied in a large number of auto industries, in car design phase, the GM company can use virtual reality to project the real proportion car body size and parts for designers. Designers can go around this unmade car, to view every detail, or even to see the rationality of interior layout by sitting in the car. When manufacturing, virtual technology can model all factors of production before assembly, and then

the engineer will make an actual assembly in the virtual world, to see what's the problem. Nissan had used virtual software to "trail route", simulated airbags components from the dashboard, then had found the windscreen was running out of the way, on the assembly line workers had to work nest's neck, as had found the problem in advance, and had solved in time, had avoided troubles in the formal production.

In auto crash test and wind tunnel test, virtual technology also can replace the actual test, thus greatly to reduce the test cost – no bump real cars and dummy, and can be repeated many times.

However, at present there is no a company, to apply the virtual technology into a car. Indeed, according to the traditional idea that "virtual reality" may be used for training drivers, once applied to the true reality of driving is almost the "road killer".

Google glasses and the named for META virtual reality glasses, in fact, the significance of real time interconnection and interaction techniques are very big to drive a car. The tall rich and handsome Tony Stark in 《Iron man》 control the high-speed flight iron man armor, it was rely on J.A.R.V.I.S – Jarvis this calm and slightly of artificial intelligence. And the biggest difference with Apple Siri is, the artificial intelligence can not only help quickly to bring up all kinds of datas, but also can real-time to project the datas in Tony's eyes, and all projections can be operated. Google glasses can cast a map in your sight, you can use language to take photos, whereas the META glasses could identify real hands and other parts, and allow them to interact with each other.

If this technology is applied to the car, the car doesn't need to equip a screen fitted in the center console. People can decorate the car interior in the most classical styles of walnut and knob according to individual favourites, the windshield will appear all sorts of information timely, which way should go when facing the crossroad? The right way will be highlighted through the glass. Possible danger ahead is not easy to be seen? Labeled dangerous red circles will point out the danger in the glass. All virtual information is combined with you see the real traffic, on the premise of not interfere with the driving maximum limit to help you to drive.

Brain wave control technology

Brain wave control technology is real, rather than a cult "brainwashed". Hospital has a "brain waves" examination, EEG (Electroencephalogram, or EEG, is in the brain activity in the brain cortex cells formed between potential difference, thus to generate an electrical current outside the cells of the cerebral cortex. It



度地给你以帮助，辅助你驾驶。

脑波控制技术

脑波控制技术是确实存在的，而不是邪教的“洗脑”。医院有一项“脑电波”检查，脑电波（Electroencephalogram,简称EEG）是大脑在活动时在大脑皮质细胞群之间形成电位差，从而在大脑皮质的细胞外产生电流。它记录大脑活动时的电波变化，是神经细胞的电生理活动在大脑皮层或头皮表面的总体反映。简言之，大脑活动是一种生物放电反应，与电鳗放电在本质上是一样的。

有放电反应，就必然有可以利用的方法。事实上如今研究脑电波控制的机构越来越多，也有许多相对成熟的产品推出。比如有一款名为EMOTIVINSIGHT的头箍，可以检测到你的脑电波行动，并可以通过它来控制遥控直升机或者遥控车；你头脑里想着上升，直升机就会上升；想着朝前跑，遥控车就会朝前跑。在上海的一个“创客嘉年华”上，有一款由脑电波控制的四轴直升机，未经训练的小朋友，都可以很快地用意念使它飞起来。这听起来有点像《X战警》里的万磁王？

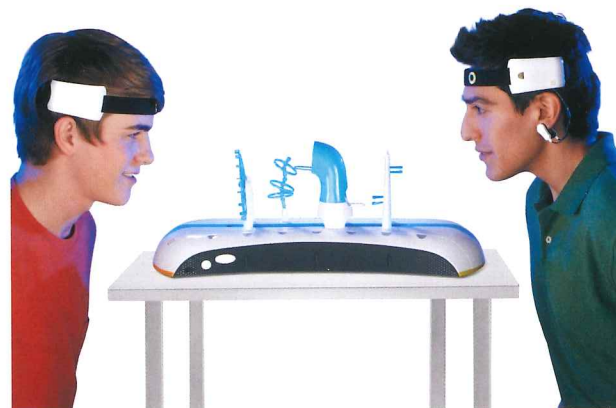
脑波控制技术应用在交通工具上，丰田已经尝试过。丰田曾与日本理化研究所一同推出过一款脑波控制的电动轮椅，可以让人用大脑发出前进和转向的命令，响应时间仅为1/8秒。如果要紧急停止，那么你只需要抽动面部的肌肉！这种技术对于全身瘫痪的患者无疑是个巨大的福音，他们不需要别人的帮助，就可以四处溜达了。

脑波控制技术一定会在未来汽车上有更大的发展。汽车安全问题，大家知道从眼睛看到危险到用脚踩下刹车，会有一个相当长的“时间差”，这个“时间差”造

records wave changes when the brain works activity, is the electrophysiological activity of nerve cells in the cerebral cortex or overall reflection on the surface of the scalp. In short, brain activity is a kind of biological discharge reaction, and is the same in essence with the electric eel discharge.

A discharge reaction, is bound to have the method to make use of it. In fact nowadays more and more institutions to study the EEG control, there are also many relatively mature products. For example a head band called EMOTIVINSIGHT, can detect your brain wave action, and can use it to remote control helicopter or remote control car. You are thinking about rising, the helicopter will rise; Thinking about running forward, remote control car will run forward. In Shanghai a "guest carnival", there is a four axis helicopter is controlled by brain waves, untrained children, can be quickly to let it fly by thoughts. This sounds a bit like "x-men" magneto?

Brain wave control technology applied in traffic tools, Toyota has been tried it. Toyota and the Japanese physical and chemical research institute had launched, a brain wave control electric wheelchair, can let the people make the commends of forward and turning from their brains, the response time is only 1/8 second. If you want to a emergency stop, then you only need to twitch the facial muscles. The technique for paralyzed patients is undoubtedly the great Gospel, they can walk around and don't need others' help,.





成了多少车祸。如果运用脑波控制技术，那么在大脑发出“停止”命令的同时，汽车的刹车就能够即时感应并刹车，或许就可以避免事故发生。

此外，“无钥匙进入技术”或许会变得更加安全，再不需要一个真正的汽车钥匙，想“开门”汽车就会自动开门；想“点火”汽车就会自动启动。再配合上自动驾驶技术，脑波控制技术会有更大应用范围——下车之后，朝着汽车点下头，想着“自己去找个车位”，汽车就会自己跑去找车位。

未来电车该是多么美好！

Brain wave control technology will have a greater development in the future cars. Auto safety

issue, as we all know there will be a fairly long time difference from eyes seeing the danger to hit the brakes by the feet, the "time difference" has caused many accidents. If using the brain wave control technology, while sending a "stop" command in the brain can instantly to induce and hit the brakes of a car, perhaps it can avoid the accident.

In addition, the "keyless entry technology" may become more secure, don't need a real car key, if you want to "open" the car it will open the door automatically; Want to "start" the car it will start automatically. Combined with automatic driving technology, brain wave control technology will have larger application range – after get off the car, nod your head to the car, thinking about to find a parking space by itself, the car will run to find parking Spaces.

How wonderful the future electric vehicle it is!



以色列推出纳米点电池新技术

Israel launched nano battery new technology

文/ 林峰 Article/ Lin Feng

以色列一家名为StoreDot的公司宣布，依靠纳米点技术，该公司已研发出能在数十秒内为手机充满电、数分钟内为电动汽车充满电的电池技术。这个技术进步将改变全球最具活力的两大消费产业。

极速充电依托纳米晶体

智能机的普及带来一个全新时代，同时用户关于待机问题的诟病从未停止，如果出远门忘带移动电源，只能到处找地方充电。

StoreDot的极速充电依托有机纳米晶体材料的纳米点技术，改变了电池发挥作用的方式，具有超强储存能力，同时又能够大幅提升充电速度。这种材料制造的电池就像超高密度的海绵，能够更快地吸收并锁住大量电量。

该材料真正运用到智能手机和电动汽车上，还要解决两大问题：

缩小体积完成体积小型化

目前，这款充电器原型的体积接近PC充电器，无法用于智能手机。该公司计划，将于2016年完成电池的小型化工作，推出能够适应手机需要的新型纤薄电池，并实现在30秒内充入供智能手机使用一天的电力。

需要注意的是，纳米点技术实际应用于手机电池而非充电器。纳米点技术能够让电池以极快速度被充满，同时保持与传统锂电池相近的放电速度，使用纳米点电池代替锂电池的同时自然需要相应的充电器。

该公司的投资方包括俄罗斯富豪、切尔西足球队老板罗曼·阿布拉莫维奇及来自亚洲的领先手机厂商。两轮融资中已经获得4800万美元投资。

A company named StoreDot from Israel has announced that rely on nano technology, the company has developed the battery technology for several seconds for full charging of the mobiles, and several minutes full charging of electric vehicles. This technology will change the world's most two dynamic consumption industries.

Fast charging based on nano crystals

The popularity of smart phones had brought into a new era, at the same time, users have never stop the complains on standby, if forget to take mobile power supply out of town, only need to look for local charge everywhere.

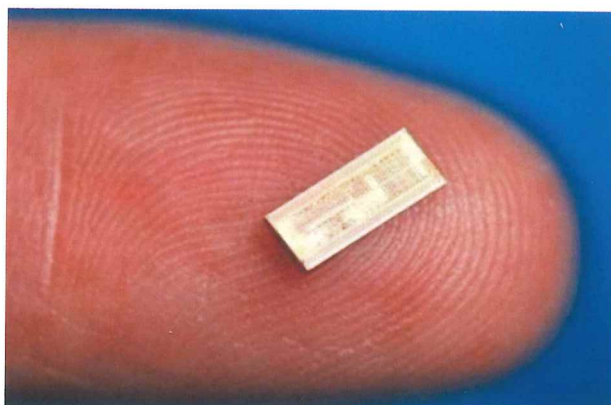
StoreDot fast charging organic nano crystalline materials of nano point technology, changed the way of cells efficiency, it has strong store capacity, and can boost charging rate at the same time. This material made battery just like the high density sponge, can absorb faster and lock a lot of electricity.

It is need to solve two major problems of this material is applied to real smart phones and electric vehicles,:

Reduce to small size to Complete volume miniaturization

At present, the volume of this charger prototype is close to the PC charger, cannot be used for smart phones. The company plans to miniaturize of the battery in 2016, lanuch the new thin battery which can meet the need of mobile phone, and charging the electricity for smart phone to use in a day within 30 seconds.

It is need to mention that the nanometer technology is used in the application of mobile phone battery rather than the charger. Nano point technology can let the battery to be filled at fast speed, while



提高循环支持三年使用期

今年全球智能手机用户数量有望达到17.5亿，这是个重大的机遇。不过一些专家表示，StoreDot需要对这项技术进行更多完善，才能终获成功。

我们生活在一个电量饥渴的世界里，人们总在寻找电源插座。StoreDot真正具备解决这个大问题的潜力。在电池体积和电力循环方面，他们还有很长的一段路要走，假如解决了这些问题，将是非常大的突破。他表示。电力循环指的是电池在寿命周期内能够充电的次数。

未来快速充电手机的售价将比普通手机高出100至150美元(约613~920元人民币)，最终版本电池将能够支持1500次的充放电循环，足以支持三年的使用。

米尔斯多夫还希望将这种技术运用到电动汽车上，在二三分分钟内充满电动汽车电量。



纳米

长度单位。原称毫微米，是10⁻⁹米，也是10⁻⁶毫米。相当于4倍原子大小，比单个细菌的长度还要小。单个细菌用肉眼是根本看不到的，用显微镜检测直径大约是5微米。假设一根头发的直径是0.05毫米，把它径向平均剖成5万根，每根的厚度大约就是1纳米。

纳米点

纳米点是一个磁性样品，其物理尺寸小于1微米(1微米即10⁻⁶米)，在几何学上是一个很小的单位。纳米点阵列非常适用于晶格介质，纳米点形状和运转方式的一致性提升了其适用领域的稳定性。

纳米点被应用于多种涉及纳米级结构的技术领域，它利用量子点(量子点是由半导体材料制成的纳米晶体，三个维度尺寸均在纳米数量级)的性质在极小范围的磁场和电场进行局部集中，例如高密度信息存储、能量存储以及发光设备。

maintaining the discharging speed close to traditional lithium battery, using nanometer point battery instead of lithium battery naturally need the corresponding charger.

The company's investors include rich Russians, Chelsea's football team boss Roman Abramovich and the leading mobile phone manufacturers from Asia. The two rounds of financing had won a \$48 million investment.

Improve circulation could support for three years

The global number of smart phone users is expected to reach 1.75 billion this year, this is a significant opportunity. But some experts say the StoreDot need to do more perfection of technology, and then to gain final success.

We live in a world hunger for electricity power, people are always looking for a power outlet. StoreDot truly have the potential to solve this big problem. In terms of cell volume and power cycle, they still have a long way to go, if solve these problems, that will be a very big breakthrough. He said. Power cycle refers to the times of battery charge within the life cycle.

Future quick charge mobile phone will sell for between \$100 and \$150 higher than the ordinary mobile phone (about 613 ~ 920 yuan), the final version of the battery will be able to support 1500 times charging and discharging circulation, enough to support the use of three years.

Millsdov, also hope to apply this technology to the electric vehicle, full charging for electric vehicle in two or three minutes.

Nano

The length unit. Originally called nanometer, is 10⁻⁹ meters, 10⁻⁶ mm. Equivalent to four times of the atomic size, smaller than the length of a single bacteria. A single bacteria can't be saw with the naked eye, microscope inspection diameter is about 5 microns. Assuming that the diameter of a human hair is 0.05 mm, the average radial cutting it into 50000 pcs, the thickness of each is about 1 nm.

Nano point

Nano point is a magnetic sample, its physical size is less than 1 micron (1 micron 10⁻⁶ meters), is a small unit in geometry. Nano Point array is very suitable for lattice medium, nano point shape and consistency of working will improve the stability of its application fields. Nanometer is applied to a variety of involved nanoscale structures technology field, which USES quantum dots (QDS is made of semiconductor nanocrystals, three dimensions in nano number level) the nature of the local concentration in small range of magnetic and electric fields, such as high density information storage, energy storage, and light emitting devices.



可折叠太阳能充电伞

Foldable Type Solar Charging Umbrella



文/章桂仙 Text/Zhang Guixian

沃尔沃在首届广州国际新能源汽车展上，别具一格展示一张极具视觉冲击力的透明大伞，吸引了不少眼球。这是沃尔沃除了新款XC90之外的另一个主打产品——可折叠太阳能充电伞。由华裔设计师Alvin Huang和他的团队一手打造。

充电伞提供充电新模式

沃尔沃可折叠太阳能充电伞第一次亮相，就在“切换到纯净能源”设计竞赛中脱颖而出，被美国《时代周刊》评为2013年度25大最佳发明之一。

可折叠太阳能充电伞的结构由“碳纤维管架+柔性光伏薄膜”构成，在实际工作中，纤维状嵌入式光伏电极可大量收集室外光照为车辆充电，将为未来电动车移动充电模式提供一种新的可能。

这把充电伞可折叠、可携带，搭建和拆解都非常灵活，普通用户经过培训后，45分钟左右即可完成搭建成功。

Volvo in the 1st Guangzhou International New Energy Cars Show showed a large umbrella with a unique style which produced a high visual impact, thus attracted many eyeballs. This is Volvo's flagship product - foldable solar charging umbrella. It was designed and made by Chinese designer Alvin Huang and his team.

Charging umbrella to provide new pattern

Volvo foldable solar charger umbrella appeared for the first time and was excellent in the the "Switch to the Clean Energy" design competition. It was named as one of 25 top inventions by the United States' Time Magazine in 2013.

Its structure is carbon fiber tube frame + flexible photovoltaic film.



可折叠充电伞可以折叠成一个小小的帐篷袋，在用户使用时，可将其放入车辆后备箱，到达目的地后再进行组装，形成一个占地36平方米、3米高的太阳能凉亭，不仅可以为电动车充电，还可以有效避免车辆遭到暴晒。

最值得骄傲的是可折叠太阳能充电伞的外形设计，最大地突破和颠覆了传统太阳能电池板单一的方形外观设计。Alvin Huang说，可折叠太阳能充电伞在他和他的团队眼中，更像是一件艺术品。为了方便折叠，他们还使用了数字化设计的网眼织物将支撑棒弯成连续绵延的曲面形式。

在沃尔沃新能源展台上，可折叠充电伞下，正停着一辆S60L插电式混合动力车。未来，电动车或许不再需要寻找充电设施，充电系统可以随车装备。

充电伞需要进一步完善

不过，虽然设计上足够吸睛，但可折叠充电伞仍有自身的局限性。

首先，目前可折叠充电伞的充电效率并不算高，例如为S60L插电式混合动力车充电就需要接近12个小时的时间，如果是纯电动车，充电时间将更长。当然，阴雨天是一定不能使用的。

其次，沃尔沃官方提供的视频中显示，组装可折叠充电伞需要的人员远远不止一个。换句话说，普通用户在实际使用时，将面临组装的潜在困难。毕竟用户的专业水平一定不及经过培训的组装技师。

其三，需要占据一块36平方米的空地，是不是有些奢侈，这对用户是一个难题。

Alvin Huang表示，未来他们会可对折叠充电伞的设计做进一步优化，重点是提升充电效率、组装的便利性、产品的占地面积等。Alvin Huang认为，目前电动车整体产业发展还并不成熟，等到几年后产业成熟了，他们的优化充电方案也会随之出炉。

可折叠充电伞目前仍处于概念阶段，沃尔沃并未透露该充电设备可能进入市场的时间。沃尔沃可折叠充电伞的意义，更多体现在对自身电动车发展的态度及技术储备实力上。

In practice, a fibrous embeddable PV panel can have a large collection of outdoor lighting for vehicle charging, so providing a new possibility for the future electric vehicles charging mode of mobile type.

This charging umbrella is foldable and portable. Its installation and dismounting are very flexible. After a training, the ordinary users can take about 45 minutes to complete its installation.

Charging umbrella can be folded into a small tent bag. When it is used, it can be placed in the car trunk. After its arrival at the destination, it will be installed to become a solar device that is 3 meters high and covers 36 m². It can charge the battery for the EV, and also can effectively avoid the vehicle's exposure to the sun.

The most proud thing is its shape design. It subverts the square design of the traditional solar panel. Alvin Huang says that, in the eyes of him and his team, it more likes a work of art. In order to be conveniently foldable, it also uses the mesh fabric digitally designed to enable the supporting rod to be bent into a continuous surface form.

In Volvo's new energy car booth, the foldable charging umbrella is near to a S60L plug-in hybrid vehicle. In the future, electric cars may no longer need to search for charging infrastructure, instead, the charging system can be their accessory equipment.

Charging umbrella needs improvement

The foldable charging umbrella still has its own limitations.

First of all, the charging efficiency is not high. For example, a S60L PHEV needs 12 hours for a charging. If it is a pure EV, then the charging will take a longer time. On rainy days, of course, it must not be used.

Second, according to the video provided by Volvo, it requires two or more persons in installation work. In other words, ordinary users will face the potential difficulties of installation. After all, the user's professional level must be less than trained technician.

Third, it needs a piece of space covering 36 square meters. So, this is a difficult problem for users.

Alvin Huang says that in the future they will optimize the foldable umbrella and the key is to improve charging efficiency, convenience of assembling, product area, etc. Alvin Huang believes that the current electric cars industry development is not mature. After a few years during which the industry can be mature, their optimal charging scheme will go out.

Charging foldable umbrella is still at the concept stage. Volvo does not yet disclose the time for the charging equipment to enter the market. The significance of Volvo's charging folding umbrella is more reflect on their own attitude and technology reserve strength on the development of electric vehicles.

