

蘇楷文

### 減速坡發電裝置 Electric Bumper

由手壓式充電手電筒獲得靈感，將其充電機構應用到減速坡中，利用車流經過的重量壓動機構產生感應電流為電池充電。儲存的電可用在自身發光提醒用路人減速坡的存在，多餘的電亦可用於路燈照明或其他交通號誌上，達到節能的目的。讓平時煩人的減速坡除了提醒用路人減速慢行外還能擁有產電的功用。模組化的設計讓每三個發電機為一組ELECTRIC BUMPER，由數組構成一個整體減速坡，若發生故障需要維修時可直接將故障的那組ELECTRIC BUMPER抽換成正常運作的模組，隨時維持整體減速坡的產電效率並方便維修。

The Electric Bumper was inspired by the idea of the hand press crank flashlight. The device generates energy when a vehicle drives over the speed bump. By converting the kinetic energy of the vehicle into electricity, the Electric Bumper absorbs the electrical power and serves as a self-luminating sign to remind drivers to slow down. Moreover, the electricity can also be used to power street lights and traffic signals.

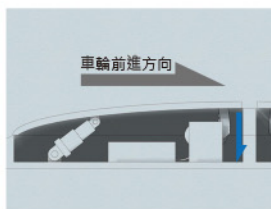
One Electric Bumper module is composed of three generators while a number of Electric Bumper modules build up a complete speed bump. Suppose a breakdown happened, engineers could directly replace the malfunctioning one with a functional one. This design enables a consistent efficacy of power generation and provides an easy approach for maintenance.

## ELECTRIC BUMPER

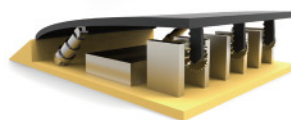
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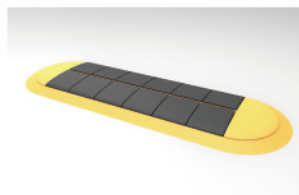
### 機構運作



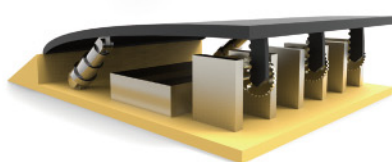
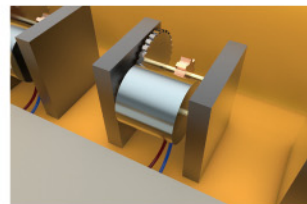
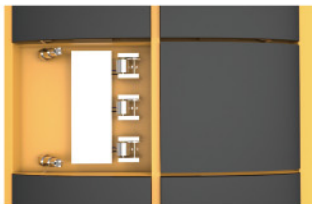
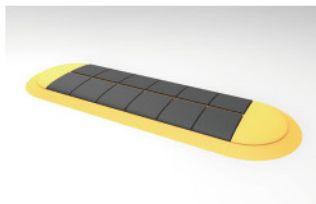
車輪壓過上板，上板下壓帶動單向齒輪組，發電機運轉產生感應電流流入電池儲存。車輪通過後阻尼將上板頂回原位。



三個發電機為一組的ELECTRIC BUMPER



數組ELECTRIC BUMPER構成一個減速坡



不同於傳統減速坡，ELECTRIC BUMPER 為模組設計。中空結構，內含發電機、電池、阻尼，利用車輛經過帶動機構發電。

