

ELECTROLUMINESCENCE AUTOMOTIVE APPLICATION

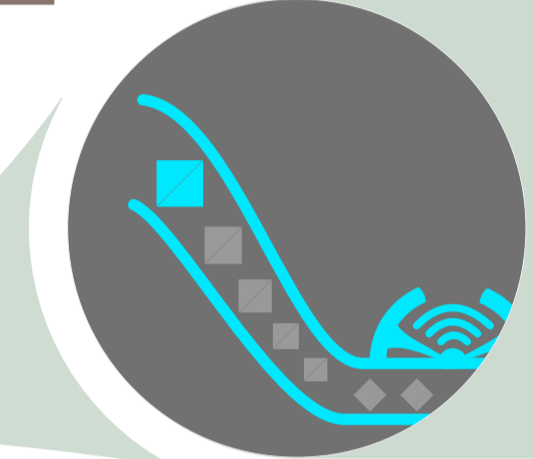
- vehicle to pedestrian communication in crosswalking scenarios -

1 AUTO DRIVING MODE



By flashing the sensing icon, other road users are informed that the car is in auto driving mode. No human drivers are in control.

2 PEDESTRIAN DETECTION

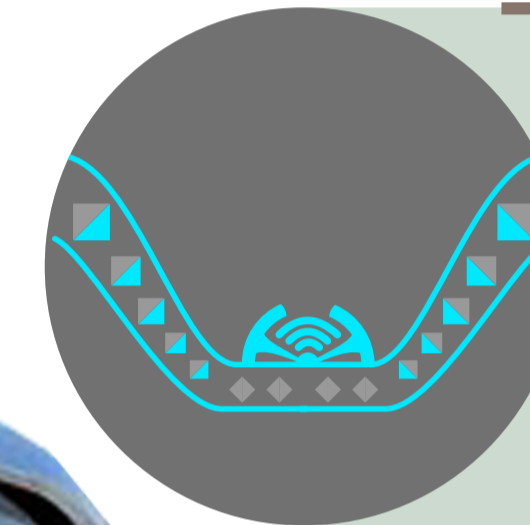


When pedestrian is detected, the pair of triangles in the exact direction will flash two times.

ELECTROLUMINESCENCE

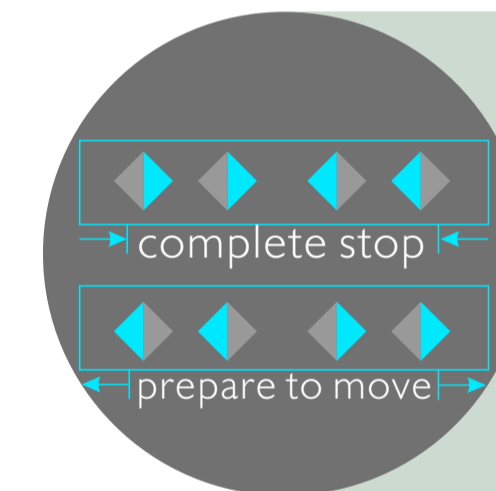
Electroluminescence (EL) is a phenomenon of light emission from phosphor material when it is exposed to a strong electric field. In practice, EL lamps can be fabricated easily with screen printing method - depositing layers of inks on top of each other, with customized patterns possible. EL can be seamlessly embedded on various substrate materials, generating soft and homogeneous light. This project is cooperated with Toyota Motor Europe to explore how EL material can be applied in automotive domain.

3 DECELERATION



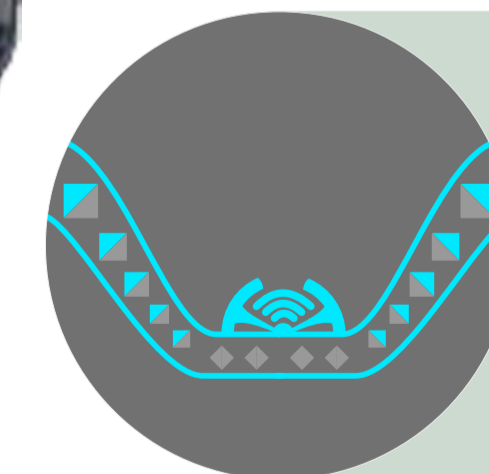
The downward triangles light up one by one, telling pedestrians that the car is slowing down gradually.

4 TRANSITION

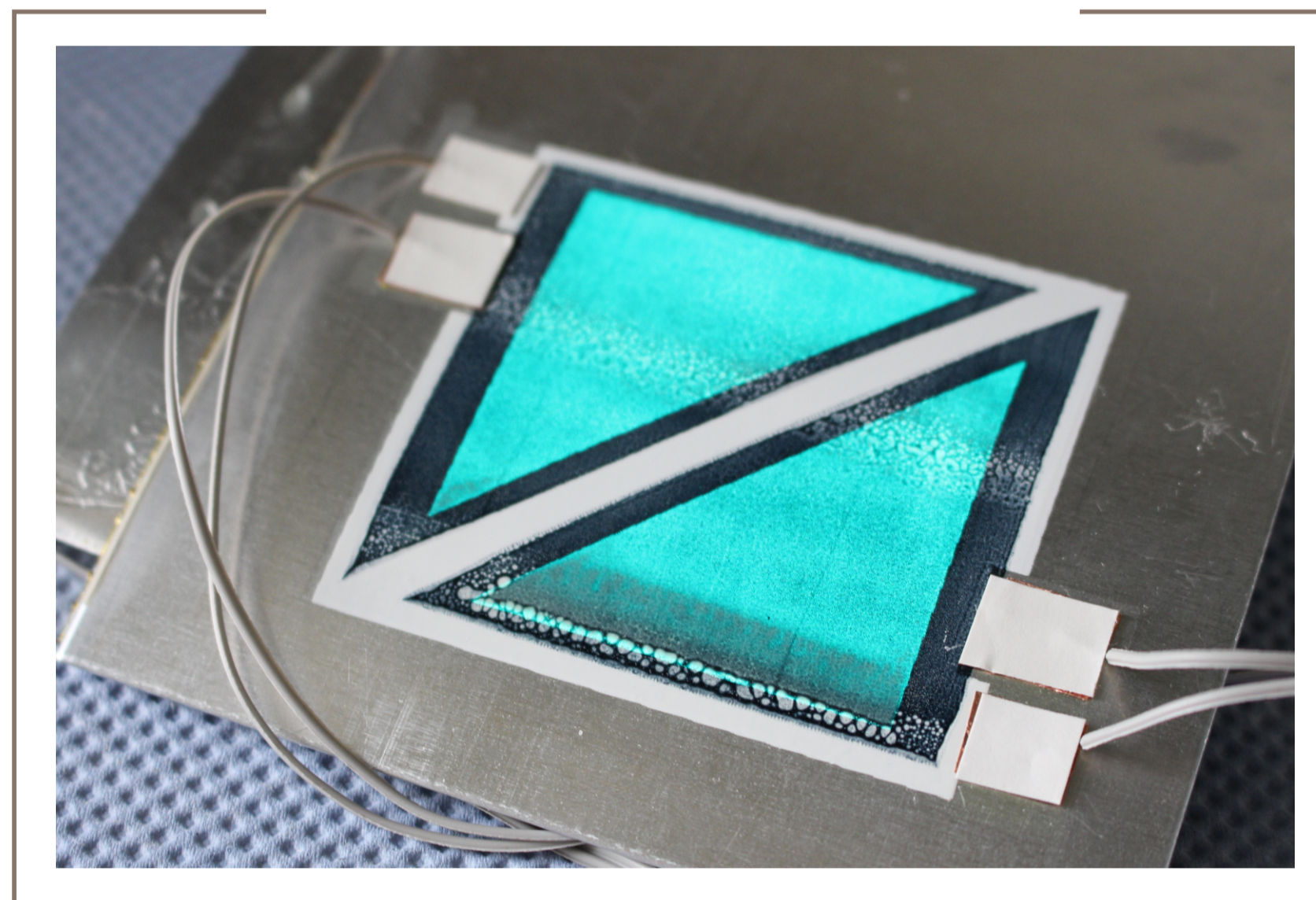


In this stage, the car is waiting for pedestrians to cross. It stays still, keeping other road users informed when it prepares to move.

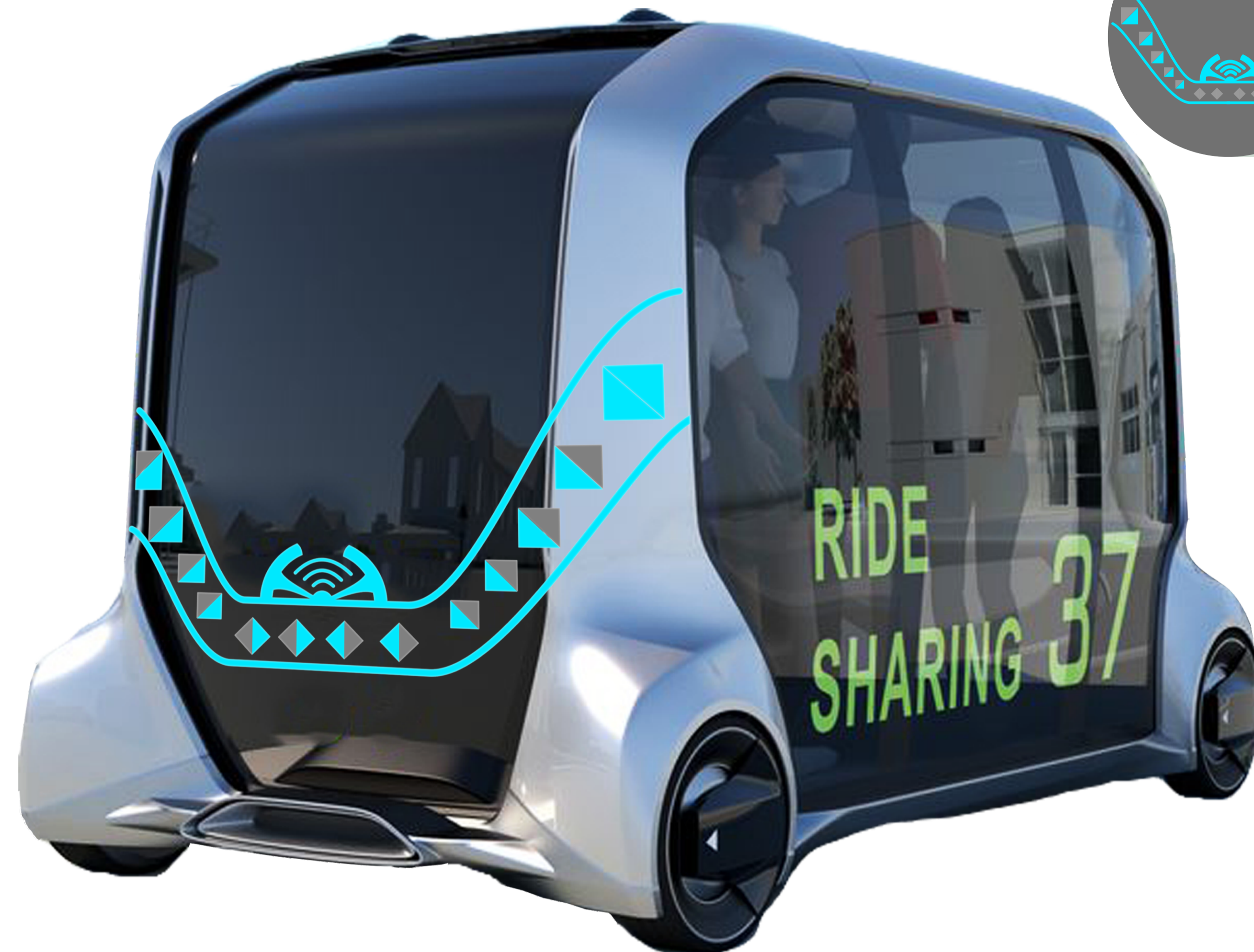
5 ACCELERATION



The car speeds up gradually with these upward triangle patterns light up one by one.



CONCEPT SPECIFICATION The proposed concept is targeting for **vehicle to pedestrian communication in crosswalking scenarios**, especially with regard to highly autonomous cars. The envisioned interaction process is divided into five stages: auto driving mode, pedestrian detection, deceleration, transition and acceleration, by means of the symbolic patterns. Its key value lies in that pedestrians can cross the street with more confirmation and certainty instead of guessing driver intentions. In addition, it provides insights about how to shape the interaction between pedestrian and automated cars in the near future as an early exploration.



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Electroluminescence Automotive Design Application
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Emerging materials

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