

# Smart Transportation

## Abstract

Smart transportation offers the promises of addressing the multi-modal transportation need of society in a sustainable manner. To bring about smart city and smart transportation development, there are yet many scientific questions to be investigated. Some examples include:

### Smart city planning

- Is high-density development a solution to rapid urbanization?
- What are the enabling technologies and urban infrastructure to enhance sustainability, accessibility, mobility, and wellbeing?

### Technologies and Urban Infrastructure

- How would autonomous vehicles modify fundamental traffic flow properties, and impact infrastructure design and urban form?
- How would electric vehicles interface with the smart grid in terms of energy distribution and storage?

### Smart Sensing

- What are the sensing strategies for collecting stationary and mobile sources of multi-modal traffic data and how are these data integrated and interpreted?
- What are the computing strategies for centralized and distributed data transmission, processing, interfacing, analysis, sharing, dissemination, and storage, in the context of big data arena?

### Smart Travel Behavior

- How would accurate, reliable and timely multi-modal traffic information affect travelers' decision making processes?
- How would future technologies, such as autonomous self-driving vehicles, electric vehicles, multi-modal traffic information, massive and robust traffic control affect activity and mobility patterns?

### Smart Performance

- How to develop a cost-effective but highly resilient multi-modal transportation system in response to increasingly frequent and serious natural and manmade disruptions?
- How would the above smart developments help to maintain safe, healthy, rapid, reliable, comfortable, convenient, affordable, equitable, and environmentally compatible mobility of mankind?

Hong Kong itself is an excellent test-bed with various multi-modal transport modes for implementing and investigating many of the issues identified above. Moreover, the excellent quality of the related disciplines in Hong Kong academic institutions, as reflected in the recent

QS subject rankings, offers an excellent platform and synergy to make substantial contribution to the theme of smart transportation.

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