



## Professor Toyasaki

### **An analysis of impacts of downstream infrastructure on environmentally friendly product design**

Professor Toyasaki is a recipient of the NSERC Discovery Grant as Principal Investigator, for his project, “An analysis of impacts of downstream infrastructure on environmentally friendly product design”, from 2009 – 2014 for the amount of \$85,000.

Below is a brief description of his project:

The development of environmentally friendly product designs is widely recognized as an important characteristic of an environmentally sustainable economy. In achieving this goal, effective incorporation of Extended Producer Responsibility (EPR) is expected to lead to product design improvement and effective recycling, especially in complex and durable products such as electrical and electronic equipment and vehicles. The potential benefits associated with EPR laws are well understood in the EU and in Japan. Unfortunately, governmental institutions and industrial companies in Canada seem to be lagging behind in implementing EPR laws. Concerning the implementation of EPR, a fundamental question arises: How can policy-makers create incentives that encourage product design changes? To answer this question, one cannot ignore the impacts of downstream infrastructures on manufacturers' operations as a whole. The suggested research framework will take into account important characteristics of recycling activities of end-of-life products that have not been included in previous work. Examples of these characteristics include economies of scale in recycling costs and existence of a non-profit organization that allocates products to recyclers.