



Faculty of Engineering and Applied Science

Chemical Engineering Seminar Series



Cement Plants as the Backbone of a Carbon Negative Infrastructure

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Dupuis Hall, Room 215



ABSTRACT

As the binding agent in concrete, cement is literally the foundation of development and therefore economic growth. Furthermore, it is one of the largest industrial sources of carbon dioxide and more importantly, has no ready substitute. As such, methods are required to produce cement, the dominant consumer of energy and source of CO₂ emissions, in a more sustainable manner. The situation is further complicated by the fact that cement produces both combustion CO₂ and process CO₂, meaning fuel switching (e.g. hydrogen) will not solve the problem. Therefore, any solution will have to be multifaceted in order to tackle the multiple sources, at multiple locations with the plant and even beyond the boundary limits. This talk will discuss several such strategies, within the Canadian context, that result in a carbon negative cement plant with the potential to produce biofuels either from algae or through chemical hydrogenation.