Nova Scotia Energy Research and Development Forum 2012

Patrick McGinn

Biography

Patrick McGinn holds the position of Microalgae Research Officer at the National Research Council of Canada's algal research facilities located in Halifax, Nova Scotia. He is currently a lead scientist in NRC's Algal Carbon Conversion Flagship Program, heading a multiparty team conducting applied R&D into the application of microalgae to industrial waste remediation linked to the production of bioenergy and other bioproducts.

Dr. McGinn obtained a B.Sc. in geology from Acadia University followed by an honours degree in biology from St. Francis Xavier University, both in Nova Scotia, Canada. He completed his Ph.D. in algal molecular biology at the Australian National University in 2003 followed by post-doctoral fellowships at Mount Allison and Princeton Universities. Dr. McGinn joined the NRC's algal research program in September of 2008.

Presentation Abstract: Application of Photosynthetic Microalgae to Wastewater Remediation for Biomass and Biofuel Production

Since 2008, the National Research Council in Halifax has conducted basic and applied R+D into the feasibility of developing microalgae as a sustainable source of biofuels, including the production of biogas through the process of anaerobic digestion of cultivated biomass. At the NRC's Marine Research Station in Ketch Harbour, N.S. a microalgae biorefinery has been established to conduct bench-scale experimentation on the composition of microalgae biomass grown under a variety of conditions. Municipal wastewater is a major source of nutrients and pollutants to freshwater and marine ecosystems and current treatment technologies are either expensive or only partially effect their removal. Therefore, intensive research is currently being conducted to constrain the potential for municipal wastewater as a source of N and P for microalgal growth. Microalgae biomass cultivated on wastewater effluents is harvested and processed to facilitate the analysis of a number of potential fuel and non-fuel products. This seminar will describe NRC's efforts to 'industrialize' the cultivation of microalgae for the treatment of municipal and agro-industrial wastewaters.